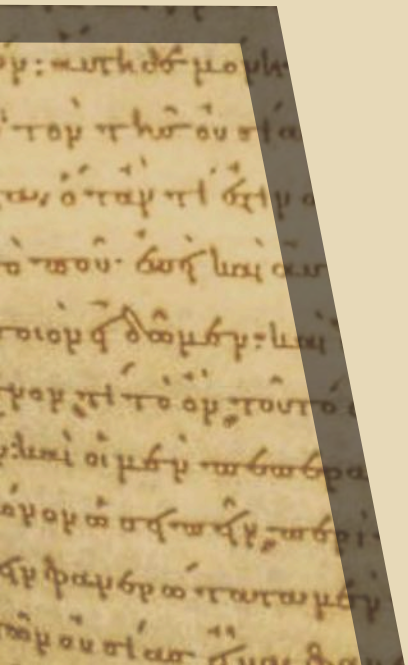
ISSN 2785-4515
N° 9
2026

ristotelica



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Cover
Wien – Österreichische Nationalbibliothek, ms. Phil. gr. 100, f. 159r
Cover design by Sascia Castagnetti

Aristotelica
Registrazione Tribunale di Milano n. 176 del 10 agosto 2021
Direttore Responsabile: Silvia Fazzo

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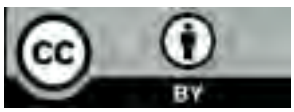

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10123 Torino
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https://www.rosenbergesellier.it/ita/riviste/aristotelica

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ARISTOTELICA

Aristotelica is a peer-reviewed journal devoted to Aristotle and Aristotelianism through the centuries with a special focus on the texts and textual traditions of Aristotle as a common intellectual background for European and Mediterranean cultures. Filling a substantial gap in existing academic journals, *Aristotelica* covers the works of Aristotle, with particular attention to his theoretical treatises, their textual constitution, and the entire exegetical tradition, and with an emphasis on philology as an appropriate scholarly approach to philosophical texts. The time span is from Aristotle's contemporaries and Greek philosophical literature in Roman times, through the medieval period (Byzantine, Arabic, Latin) and Renaissance, going up to the twentieth century. The journal also considers submissions on the relevance of Aristotelianism to theoretical, epistemological, and ethical debates, as well as to fundamental questions about the establishment, definition, and development of ancient philosophy and science.

Submissions, which can be very short or long (there is no word limit), and written in any of the main European languages, must meet the highest scholarly standards and be based on sound methodology. They should contribute significantly to the field by asking innovative questions and reaching well-argued and ground-breaking conclusions.

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EDITORIAL

The present issue of *Aristotelica* brings together contributions that range from philosophical interpretation to textual criticism, from the transmission of manuscripts to the reception of Aristotle in late antiquity and the early modern period. Considered together, they offer a picture of the diversity and vitality of contemporary Aristotelian studies.

One feature of the volume is the prominence of research on the Neoplatonic tradition. Three contributions examine Aristotle's reception in different contexts, from the Greek commentators to the Armenian world, continuing a line of research that has already been explored in previous issues of the journal and in the annual panel "Aristotle among the Neoplatonists" at the annual conference of the International Society for Neoplatonic Studies (ISNS). The geographical horizon thus extends beyond the better-known centers of the Greek and Latin traditions, drawing attention to intellectual landscapes that deserve an increasingly prominent place in the history of Aristotelianism.

The same widening of perspective characterizes other contributions. Medieval translations, Renaissance printed editions, and newly identified manuscript witnesses are approached not simply as documents of textual history but as part of the intellectual environments through which Aristotle continued to be read, discussed, and appropriated in different languages and cultures. The Aristotelian tradition appears here not as a single line of transmission, but as a network of texts, readers, translators, commentators, and scholars extending across the Mediterranean and beyond.

In particular, the study devoted to the Giunta edition of the *Metaphysica Nova* illustrates how a well-known Renaissance printed text may still yield new evidence for the history of the Aristotelian textual tradition, well beyond its significance for the history of printing.

Documentary evidence is also emphasized in the volume. Beyond presenting new interpretations, it offers direct access to a newly identified manuscript witness through the analytical discussion of selected readings and the publication of the complete photographic plates of its *Historia animalium*

Book X, making this primary source immediately available for further research. This documentary dimension is intended to become an increasingly important feature of the journal.

Taken together, the contributions in this issue reflect several of the directions currently shaping Aristotelian studies: renewed attention to textual transmission and documentary evidence, growing interest in the multilingual history of the tradition, and continuing dialogue between philosophical interpretation and philological research.

LUIGI FERRARI

THE ANTISTHENEAN APORIA IN ARISTOTLE'S *METAPHYSICS* H 3

Abstract

In *Metaphysics* H 3 (1043b4-32), Aristotle develops a unified account of definition that culminates in the so-called "Aporia of the Antistheneans." This article offers a new interpretation of the role of that aporia within the overall argument of the chapter. It argues that Aristotle first criticizes two different conceptions of definition: on the one hand, materialist compositional theories, represented by the epistemological model known from Plato's *Theaetetus* as the "Dream Theory"; on the other, certain Academic attempts to define substance through genus and differentia. According to Aristotle, both approaches ultimately fail to account for the unity of substance and, consequently, for the unity of its definition. Against this background, the introduction of the Aporia of the Antistheneans acquires a precise philosophical function. Rather than constituting an isolated digression or an independent refutation of Antisthenes, it serves as a dialectical step that exposes the limitations of a non-essentialist epistemology while preparing Aristotle's own hylomorphic account of definition. A close analysis of the structure of the passage shows how the different philosophical positions brought into the discussion progressively converge toward Aristotle's solution, according to which the unity of matter and form is the necessary condition of scientific definition. The article thus proposes an integrated reading of *Metaphysics* H 3 in which the Aporia of the Antistheneans is not an isolated textual difficulty but a central moment in Aristotle's argumentative strategy for reformulating, through critical engagement, the principal theories of definition current in the philosophical debates of his time.

Keywords

Definition, Essence, Quality, Elements, Compound

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1. The Aporia of the Followers of Antisthenes

Chapter 3 of *Metaphysics Eta*, henceforth H 3, has often been regarded as lacking a coherent structure.[1] A closer examination, however, reveals a clear unifying thread: the problem of definition. Dividing chapter H 3 into its constituent five sections, following in Pierre Marie Morel's footsteps, makes its overall argument considerably easier to follow.[2] Section H 3.1 (1043a29-b4) raises the question of whether the name of a thing refers to its form or to the composite of matter and form;[3] section H 3.2 (1043b4-14) examines the relation among the components of the definition of sensible entities. Section H 3.3 (1043b14-23) turns to the ontology of form, which, as essence, constitutes the proper object of definition. Section H 3.4 (1043b23-32) introduces the so-called Aporia of the Followers of Antisthenes[4] concerning the possibility of definition. Finally, Section H 3.5 (1043b32-1044a14) compares substance and its definition with number, identifying significant structural analogies between them.

The aporia of Antisthenes' followers occupies section H 3.4. It splits accordingly in six subsections. Their Greek text reads as follows:

[i] ὥστε ἡ | ἀπορία ἦν οἱ Αντισθένειοι καὶ οἱ οὕτως ἀπαίδευτοι ἠπόρουν [25] ἔχει τινὰ καιρόν, [ii] ὅτι οὐκ ἔστι τὸ τί ἔστιν ὁρίσασθαι, τὸν | γὰρ ὅρον λόγον εἶναι μακρόν, [iii] ἀλλὰ ποῖον μέν τί ἐστιν| ἐνδέχεται καὶ διδάξαι, ὥσπερ ἄργυρον, τί μέν ἐστιν οὔ, | ὅτι δ' οἷον καττίτερος· [iv] ὥστ' οὐσίας [v] ἔστι μὲν ἧς ἐνδέχεται | εἶναι ὅρον καὶ λόγον, οἷον τῆς συνθέτου, ἐάν τε αἰσθητὴ [30] ἐάν τε νοητὴ ᾖ· [v] ἐξ ὧν δ' αὕτη πρώτων, οὐκέτι, [vi] εἴπερ τὶ | κατὰ τινὸς σημαίνει ὁ λόγος ὁ ὁριστικὸς καὶ δεῖ τὸ μὲν | ὥσπερ ὕλην εἶναι τὸ δὲ ὡς μορφήν (H 3.1043b23).

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[1] Ross (1924) p. 231.

[2] The present division of the chapter follows Morel (2015) p. 127. The critical edition is by Ross (1924). Translations are from Barnes, ROT, slightly modified.

[3] "[...] whether the name 'house' signifies the composite, that is, 'a shelter made of bricks and stones arranged in this particular way', or rather signifies the actuality and the form" (*Metaph.* H 3.1043a29-33). Strictly speaking, the proper object of definition is the form.

[4] On Antisthenes as a pupil of Socrates and an opponent of Plato's metaphysical position, see Brancacci (1990). His anti-metaphysical outlook led him to reject the Platonic Ideas, which he regarded as mere products of thought (*ibid.*, p. 183). Although he wrote extensively, only a limited number of fragments and testimonia have survived. For a long time, historians of ancient philosophy tended to interpret Antisthenes from a predominantly skeptical perspective; more recent scholarship has substantially revised this view. For a comprehensive and fundamental discussion of Antisthenes, see Giannantoni (1990) pp. 195-411.

[i] Therefore [ὥστε] the difficulty which was raised by the school of Antisthenes and other such uneducated people has a certain appropriateness [ἔχει τινὰ καιρόν]. [ii] They stated that the 'what' [*ti esti*] cannot be defined (for the definition so called is a long formula); [iii] but of what *sort* a thing [*poion ti esti*], e.g. silver, is, they thought it possible to explain [*didaxai*], not saying what it is but that it is like tin. [iv] Therefore one kind of substance can be defined and formulated, i.e. the composite kind, whether it be the object of sense or of reason; [v] but the primary parts of which this consists cannot be defined, [vi] since a definitory formula predicates something of something, and one part of the definition must play the part of matter and the other that of form.[5]

2. Sources

A testimony preserved by Diogenes Laertius states that "Antisthenes was the first to define definition itself, maintaining that a definition is an account revealing what a thing was or is", τὸ τί ἦν ἢ ἔστι.[6] This way of conceiving definition by Antistenes bears a striking resemblance to Aristotle's celebrated τὸ τί ἦν εἶναι.[7] Yet the relationship between the two is not altogether clear.

Among the many testimonies that Aristotle preserves concerning Antisthenes and his followers, one passage in *Metaphysics* Δ 29 appears especially relevant to the present inquiry:

διὸ Αντισθένης ᾤετο εὐήθως μηθὲν ἀξιῶν λέγεσθαι πλὴν τῷ οἰκείῳ λόγῳ, ἓν ἐφ' ἑνός· ἐξ ὧν συνέβαινε μὴ εἶναι ἀντιλέγειν, σχεδὸν δὲ μηδὲ ψεύδεσθαι. ἔστι 35 δ' ἕκαστον λέγειν οὐ μόνον τῷ αὐτοῦ λόγῳ ἀλλὰ καὶ τῷ ἑτέρου, ψευδῶς μὲν καὶ παντελῶς, ἔστι δ' ὡς καὶ ἀληθῶς, ὥσπερ τὰ ὀκτὼ διπλάσια τῷ τῆς δυάδος λόγῳ (*Metaph.* Δ 29.1024b32-37).

Hence Antisthenes foolishly claimed that nothing could be described except by its own formula (*oikeios logos*), – one formula to one thing; from which it followed that there could be

[5] Unless otherwise indicated, all translations from Aristotle's *Metaphysics* are those of Barnes's Oxford Revised Text, vol. 2, pp. 1-205 In a number of passages, however, I introduce slight modifications where required by the interpretation defended in the present article.

[6] Diog. Laert. VI 3: πρῶτός τε ὡρίσατο λόγον εἰπών· λόγος ἐστὶν ὁ τὸ τί ἦν ἢ ἔστι δηλῶν ("He was the first to define definition itself, saying that a definition is an account revealing what a thing was or is").

[7] This testimony of Diogene Laerzio does not coincide with Aristotle's report in *Metaphysics* H 3. There Aristotle attributes to the Antistheneans the claim that "They stated that the 'what' [*ti esti*] cannot be defined (for the definition so called is a long formula); but of what *sort* a thing [*poion ti esti*], e.g. silver, is, they thought it possible to explain [*didaxai*], not saying what it is but that it is like tin" (1043b25-27). The contrast is evident: a logos of the *poion ti esti* is the very opposite of a logos of the *ti ēn ē esti*.

no contradiction, and almost (*schedon*) that there could be no error. But it is also possible to describe each thing not only by its own formula, but also by that of something else. This may be done altogether falsely indeed, but in some ways it may be done truly, e.g. eight may be described as a double number by the use of the formula of two.

It should be noted that the chapter of *Metaphysics* Δ from which this passage is taken is devoted to the notion of falsehood rather than to the problem of definition. Nevertheless, it allows us to infer that Antisthenes maintained that each thing admits only its own *oikeios logos*, the only account appropriate to the object under consideration. Indeed, Antisthenes's *oikeios logos* fits very well with the teaching of the *poion ti esti* which Aristotle attributes to Antisthenes's followers when recording their aporia in H 3, section [iii].

The expression *hen eph' henos* (1024b33), means precisely that each thing possesses only one proper *logos*. Because it is both unique and appropriate, such a *logos* cannot be contradicted and, as Aristotle cautiously remarks (*schedon*), can scarcely be false. From the adversative particle onward, however, Aristotle is speaking in his own voice, exposing what he regards as the naivety of the Antisthenean thesis (1024b34-37).[8] He refutes it by observing that the account proper to the dyad can also be predicated truly of eight.

3. The Structure of the Aporia

For the sake of clarity, we have distinguished the six stages into which the argument is articulated:[9]

[i] Therefore the difficulty which was raised by the school of Antisthenes and other such uneducated people has a certain appropriateness.

[ii] They stated that the 'what' cannot be defined (for the definition so called is a long formula);

[8] Berti (2017) p. 253 n. 158: "Se si attribuisce a una cosa la definizione di una cosa diversa, si è completamente nel falso; ma se si usa la definizione di una cosa diversa, per esempio del due, non come definizione, ma come indicazione di una sua affezione, per esempio dire che otto è un numero doppio, si può essere nel vero."

[9] This division of the aporia is also adopted by Malink (2024) p. 33.

[iii] but of what *sort* a thing, e.g. silver, is, they thought it possible to explain, not saying what it is but that it is like tin.

[iv] Therefore one kind of substance can be defined and formulated, i.e. the composite kind, whether it be the object of sense or of reason;

[v] but the primary parts of which this consists cannot be defined,

[vi] since a definitory formula predicates something of something, and one part of the definition must play the part of matter and the other that of form.

A question that has long occupied interpreters is the following. Apart from point [i], which clearly constitutes Aristotle's introduction to the problem, which of the remaining statements express the position of the Antistheneans, and which instead represent Aristotle's own view?[10]

Several preliminary observations arise from a first reading.

The aporia is introduced in [i] as the consequence of something previously established. I shall return to this point in §4.1.

If [ii] is taken literally, the statement that "it is impossible to define what a thing is" appears to deny the possibility of definition altogether, as most interpreters have assumed. Should it indeed be understood as a universal denial of definition, it would express an extremely skeptical position that is difficult both to sustain and to reconcile with the remainder of the passage.

[10] Bostock, Morel, Malink, Brancacci, and Giannantoni offer different interpretations of the passage. In fact, the disagreement concerns only the attribution of points [iv], [v], and [vi], that is, the second half of the so-called aporia (1043b28-32), since points [ii] and [iii] clearly express the Antisthenean position. Bostock (1994) p. 266 observes: "But then Aristotle apparently resumes in his own person at b28." Malink (2024) pp. 34 ff. likewise argues that "it seems unlikely that points [iv]–[vi] constitute a direct report of Antisthenes' position. Nevertheless, the presence of *hōste* in point [iv] makes it clear that the discussion in [iv]–[vi] is closely related to the Antisthenean difficulty." Brancacci (1990) p. 237, referring to 1043b28-32, maintains instead: "Non può certo essere riferita ad Aristotele la tesi enunciata in questo passo." Giannantoni (1990) p. 385 writes: "non pare dubbio che agli Antistheneioi debba essere riferito quanto Aristotele dice da *hōste hē aporia* di 1043b23-24 fino a *kattiteros* di b28." He therefore attributes to the Antistheneans the entire first part of the aporia, including point [i] – an attribution that cannot be accepted, since point [i] is clearly Aristotle's own introduction – and thereby implicitly suggests that the second half reflects Aristotle's position, although he never states this explicitly. Morel (2015) p. 152, finally, argues that the Antisthenean position extends at least through point [v], while allowing that point [vi] may express Aristotle's own view. As these interpretations show, no scholarly consensus has yet emerged.

This radical claim is justified by the parenthetical remark that "a definition is a lengthy account" ("long formula"), a phrase that has itself received widely differing interpretations.[11]

Point [iii] seems to mitigate the sweeping denial expressed in [ii]. If the *what-it-is* of a thing cannot be known, one may at least teach what sort of thing it is (*poion ti esti*). Yet the example of silver raises an immediate difficulty, since silver appears to be an element rather than an ordinary object; the point therefore will require closer examination.

If the literal interpretation of [ii] is correct, point [iv] becomes difficult to accommodate. Aristotle now states that composite substances do admit of definition, a claim seemingly incompatible with the preceding assertion that definition is impossible.[12] The same tension extends to [vi]. Taken in this way, [ii] introduces a serious inconsistency into the argument.

The only apparent solution would be to attribute the second half of the passage – points [iv], [v], and [vi] – to Aristotle himself. The aporia would then be confined to [ii] and [iii], which would express the Antisthenean position, while the remaining lines would present Aristotle's own solution. More precisely, [ii] and [iii] would constitute the thesis, whereas [iv]–[vi] would form Aristotle's antithesis. This interpretation, however, cannot be maintained. If the second half were intended as an antithesis, one would expect it to be introduced by an adversative particle such as "or" or "rather."

[11] Bostock (1994) p. 265 writes: "The only hint we are given as to why the Antistheneans supposed that definition was altogether impossible is in the words 'since a definition is a long formula' [...] the source of Antisthenes' problem must be that a definition is supposed to contain several words. Here it is relevant to recall that in Delta 29 Antisthenes is described as holding the view that 'nothing can be spoken of except by its own formula, one to one' (1024b32-33). If we understand this as intended to imply that nothing can be spoken of except by means of its own name, then we may perhaps elucidate the thought in this way." Malink (2024) pp. 38 ff., by contrast, argues that the expression "a long account" should be understood as an excessively long account, one that inevitably generates an infinite regress.

[12] Malink (2024) explicitly acknowledges that point [iv] is difficult to reconcile with point [ii]: "Moreover, Aristotle's statement in [iv] that there is a definition of composite substances seems to contradict the skeptical position attributed to Antisthenes in [ii] that 'it is not possible to define what a thing is'." See also Grube (1950) p. 23 and Hicken (1958) p. 134.

Instead, Aristotle introduces it with a second *hōste*, a consecutive conjunction meaning "hence," "therefore," or "consequently." The latter part of the passage is explicitly presented as following from the former and therefore cannot stand in simple opposition to it.

Everything therefore depends on the interpretation of [ii], which determines the coherence of the entire sequence. At the same time, the Antisthenean aporia differs markedly from the aporiai familiar from *Metaphysics* B. The interpretation of the text thus appears to reach an impasse. To overcome it, I suggest that one must first understand why Aristotle says that the Antisthenean aporia is, "in a certain sense," timely and appropriate (*echei tina kairon*).

4. Why Is This Aporia Appropriate?

4.1 Against Whom Is Aristotle's Criticism in 1043b4-14 Directed?

Most interpreters agree that the *hōste* introducing the discussion of the aporia at the beginning of our H 3.4 [i], 1043b23, does not draw its conclusion from the immediately preceding lines (H 3.1043b14-23), which editors have often enclosed in parentheses for precisely this reason. Rather, it refers back to the earlier passage at H 3.2 (1043b4-14). It is therefore useful to consider that passage:

οὐ φαίνεται [5] δὴ ζητοῦσιν ἡ συλλαβὴ ἐκ τῶν στοιχείων οὖσα καὶ συνθέσεως, οὐδ' ἡ οἰκία πλίνθοι τε καὶ σύνθεσις. καὶ τοῦτο ὀρθῶς· οὐ γάρ ἐστιν ἡ σύνθεσις οὐδ' ἡ μῖξις ἐκ τούτων ὧν ἐστὶ σύνθεσις ἢ μῖξις. ὁμοίως δὲ οὐδὲ τῶν ἄλλων οὐθέν, οἷον εἰ ὁ οὐδὸς θέσει, οὐκ ἐκ τοῦ οὐδοῦ ἡ θέσις ἀλλὰ μᾶλλον [10] οὗτος ἐξ ἐκείνης. οὐδὲ δὴ ὁ ἄνθρωπός ἐστι τὸ ζῷον καὶ δίπουν, ἀλλά τι δεῖ εἶναι ὃ παρὰ ταῦτά ἐστιν, εἰ ταῦθ' ὕλη, οὔτε δὲ στοιχεῖον οὔτ' ἐκ στοιχείου, ἀλλ' ἡ οὐσία· ὃ ἐξαιροῦντες τὴν ὕλην λέγουσιν. εἰ οὖν τοῦτ' αἴτιον τοῦ εἶναι, καὶ οὐσία τοῦτο, αὐτὴν ἂν τὴν οὐσίαν οὐ λέγοιεν (1043b4-14).

If we consider we find that the syllable is not produced by the letters and juxtaposition, nor is the house bricks and juxtaposition. And this is right; for the juxtaposition or mixing is not produced by those things of which it is the juxtaposition or mixing. And the same is true in the other cases, e.g. if the threshold is characterized by its position, the position is not produced by the threshold, but rather the latter is produced by the former. Nor is man animal and biped, but there must be something besides these, if these are matter – something which is neither an element in the whole nor produced by an element, but is the substance, which people eliminate and state the matter. If then this is the cause of the thing's being, and if the cause of its being is its substance, they cannot be stating the substance itself.

The target of Aristotle's criticism is immediately apparent. He is attacking a compositional conception of substance that, on the one hand, considers only the material constituents while ignoring the formal component and, on the other, fails to explain the unity of what is defined, as shown by the example "animal and biped" (1043b10).

Who are the thinkers Aristotle has in mind?

Many scholars have argued that the passage is directed against certain Platonists[13], and they are certainly right. Yet they are not Aristotle's only target. The argument is in fact divided into two distinct parts.

The first part employs the examples of letters and syllables (1043b4-6), as well as bricks and the house, examples already familiar from *Metaphysics* Z 17 (1041b5-6, 11-17). It then introduces the example of the threshold and its position (1043b8-10), which had been discussed at length in H 2 (1042b26-28). All these examples concern entirely material entities. It is therefore reasonable to conclude that Aristotle is here criticizing thinkers whom we may broadly describe as "materialists," that is, philosophers who explain reality exclusively in terms of material constituents.

The second part of the passage (1043b10-14), by contrast, examines genus and differentia as the constituents of substance and of its definition. These are obviously not material components in the strict sense. Here Aristotle is directing his criticism toward Academic attempts to construct definitions. Since principles are indispensable for definition, the two groups appeal to different kinds of principles. Material elements serve as the principles of the materialists, whereas the Academics make genus their fundamental principle.

[13] Malink (2024) p. 33 writes: "Against this, Menn and others argue that this passage is not meant to describe Aristotle's own position, but an account of definition by genus and differentia which was maintained by some Platonists." Similarly, Brancacci (1990) p. 227 remarks: "elemento comune ai vari momenti di tale analisi è il riferimento, polemico in punto di diritto, alla posizione assunta dai Platonici relativamente alla questione dell'ousia." Bostock, Morel, and Giannantoni likewise interpret Aristotle's criticism in this direction.

4.2 Aristotle's Criticism of the "Materialists"

Who are these "materialists" whom Aristotle criticizes alongside the Academics? I believe they are philosophers contemporary with Aristotle, who probably took part in the debates conducted within, or in the intellectual milieu surrounding, the Academy, much like the "earth-born giants" (*gēgeneis*) who appear in Plato's *Sophist*.

Further evidence is provided by a passage of Plato's *Theaetetus* containing what appears to be a theory of knowledge. Because of the circumstances in which Socrates introduces it, modern scholars have come to refer to it as the "Dream Theory."[14] The relevant passage is *Theaetetus* 201d8-202c5[15], where Socrates recounts a dream in which someone expounds this theory to him.

The theory may be analyzed into seven principal theses. First, composite things possess a *logos*, which consists in the enumeration of their constituents, whereas simple elements are devoid of *logos*, since what is genuinely elementary cannot be analyzed any further. Second, elements may nevertheless be named. Third, nothing can be said of an element beyond its name;

[14] On the attribution of the Dream Theory, as well as on the constructive or positive suggestions that Plato leaves undeveloped at the end of the dialogue, see Ferrari (2011) p. 107.

[15] *Theaet*. 201d8-202c5: "If you have had a dream, let me tell you mine in return. I seem to have heard some people say that what might be called the first elements of which we and all other things consist are such that no account can be given of them. Each of them just by itself can only be name; we cannot attribute to it anything further or say that it exists or does not exist, for we should at once be attaching to it existence or nonexistence, whereas we ought to add nothing if we are to express just it alone. We ought not even to add 'just' or 'it' or 'each' or 'alone' or 'this' or any other of a host of such terms. These terms, running loose about the place, are attached to everything, and they are distinct from the things to which they are applied. If it were possible for an element to be expressed in any formula exclusively belonging to it, no other terms ought to enter into that expression. But in fact there is no formula in which any element can be expressed; it can only be named, for a name is all there is that belongs to it. But when we come to things composed of these elements, then, just as these things are complex, so the names are combined to make a description (λόγος), a description being precisely a combination of names. Accordingly, elements are inexplicable and unknowable, but they can be perceived, while complexes ('syllables') are knowable and explicable, and you can have a true notion of them. So when a man gets hold of the true notion of something without an account, his mind does think truly of it, but he does not know it, for if one cannot give and receive an account of a thing, one has no knowledge of that thing. But when he has also got hold of an account, all this becomes possible to him and he is fully equipped with knowledge." (Engl. transl. Cornford 1961, pp. 908-9).

not even being can properly be predicated of it. Fourth, elements are unknowable, whereas compounds are knowable. Fifth, elements are perceptible. Sixth, everything, including we ourselves, is composed of elements. Finally, the relation between letters and syllables serves as the paradigm of the relation between elements and compounds.[16]

At the end of the *Theaetetus*, Plato rejects this theory as inadequate, and the dialogue concludes without offering any positive solution to the problem of knowledge. A considerable number of scholars have argued that Dream Theory reflects the views of Antisthenes, or at least of philosophers belonging to the Antisthenean tradition.[17] This is certainly possible. I would nevertheless prefer to regard it as Plato's presentation of a standard non-essentialist theory of knowledge, representative of his materialist opponents rather than a direct exposition of Antisthenes's own doctrine. Although it shares important features with Antisthenean epistemology, decisive differences remain, and these will become apparent in the following pages (see [ii] in §6).

The Dream Theory corresponds remarkably well to the conception criticized by Aristotle in the first part of H 3 (1043b4-10). According to that theory, everything is composed of elements. Each element is perceptible and can be named, yet none is knowable because none possesses a *logos*. Only the compound can be known, since only it possesses a *logos*, understood as the combination or interweaving of the names of its constituent elements.

Nothing in this account corresponds to a formal principle. The relationship between letters and syllables is explicitly presented in the *Theaetetus* as the paradigmatic example of the relationship between elements and compounds. Significantly, Aristotle challenges precisely this conception at *Metaphysics* H 3.1043b5, where he rejects the idea that the *logos* of the syllable is merely the aggregate of its *stoicheia*. This parallel provides, in my view, the decisive clue.

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[16] Sedley (2004) p. 154.

[17] Burnyeat (1990) maintains that if the Dream Theory "does derive – in whole or in part – from an actual historical thinker, the most likely candidate is Antisthenes", even though he admits that "Socrates in the *Theaetetus* is not restating Antisthenes but making creative use of some Antisthenean materials" (pp. 165-6). See also Malink (2024) p. 44, Schwegler (1848) p. 144, Zeller (1875) p. 253 n. 1.

There are therefore good reasons for concluding that, in the first part of H 3 (1043b4-10), Aristotle is primarily engaging with theories of the type represented by the Dream Theory. His criticism is directed against their inability to account for the formal principle that alone explains the unity of the compound. At the same time, however, he accepts one of their central insights: that *logos* belongs properly only to composite entities. This point, far from being rejected, will become one of the foundations of Aristotle's own theory of definition.

Thus, the theory fails because it cannot account for the unity required by scientific definition.

4.3 Aristotle's Criticism of the Academics

We have seen that, for the Academics, the definition of composite substance takes genus as its fundamental principle. The opposition between material elements, regarded as the principles of the "materialists," and genus, regarded as the principle of the Academics, had already been formulated in the sixth aporia of *Metaphysics* B,[18] where Aristotle asks whether the true principles are genera rather than the primary constituents from which each thing is composed. The "primary constituents" are the elements; in contexts such as this, the term *stoicheia* invariably refers to the material constituents of a thing.

Genus, together with differentia, had already been examined extensively in *Metaphysics* Z 12.[19] There too the relationship between genus

[18] 998a20-b13: "Apart from the difficulty of stating the case truly with regard to these matters, it is hard to say, with regard to the first principles, whether it is the genera that should be taken as elements and principles, or rather the primary constituents of a thing; e.g. it is the primary parts of which all articulate sounds consist that are thought to be elements and principles of articulate sound, not the common genus – articulate sound; [...] (b4) but in so far as we know each thing by its definition, and the genera are the principles of definitions, the genera must also be the principles of definable things [...] (b11) But, again, it is not possible to describe the principles in *both* ways. For the formula of the substance is one; but definition by genera will be different from that which states the constituent parts of a thing." It is evident that the elements and the genus are opposed here.

[19] Z 12.1037b11-14: "I mean this problem: – wherein consists the unity of that, the formula of which we call a definition, as for instance in the case of man, twofooted animal; for let this be the formula of man. Why, then, is this one, and not many, viz. animal *and* twofooted?".

and differentia gives rise to an aporia for which Aristotle appears to offer a solution.[20]

A close reading of Z 12 shows that, in Aristotle's view, the reason for the failure of Platonic definitions is that genus and species are conceived as existing separately from one another. Since both are substances existing in actuality, and since both are simple, they cannot constitute a genuine unity; they can only coexist side by side. Consequently, they are incapable of yielding a truly unified definition of substance.

The problem is therefore always the same: explaining the unity of substance that makes definition possible.

4.4 Aristotle Levels the Same Charge against the Materialists and the Academics

Despite the profound differences between these two approaches to knowledge, Aristotle concludes the passage (1043b13-14) by directing exactly the same criticism against both groups. In their respective definitions, he says, they only "state the matter" (*tēn hulēn legousin*).

This accusation is unsurprising when directed against the materialists. It is far more striking when applied to the Platonists. Yet Aristotle makes a

[20] In Z 12.1037b18-19 says: "In the present case, on the other hand, one does not share in the other; the genus is not thought to share in its differentiae." And at lines 1037b24-28: "But surely all the attributes in the definition *must* be one; for the definition is a single formula and a formula of substance, so that it must be a formula of some one thing; for substance means a 'one' and a 'this', as we maintain. […]." As can be seen, Aristotle emphasizes that the unity of substance and its definition was a major problem for the Platonists. Indeed, Aristotle continues as follows: "We must first inquire about definitions arising out of division […] and of the two the one is differentia and the other genus, e.g. in 'two-footed animal' 'animal' is genus, and the other is differentia. If then the genus absolutely does not exist apart from the species which it as genus includes, or if it exists but exists as matter (for the voice is genus and matter, but its differentiae make the species, i.e. the letters, out of it), clearly the definition is the formula which comprises the differentiae." (1037b27-29, 1038a3-9). Berti (2017) p. 340 n. 130, says: "Qui Aristotele è polemico nei confronti dei Platonici, i quali ammettevano generi esistenti oltre le specie, considerando tutti, generi e specie, come Idee separate. Dire che il genere è materia della specie equivale a dire che esso non esiste oltre la specie; quindi, genere e specie formano un'unità come materia e forma, e questa è la soluzione dell'aporia sul perché l'oggetto della definizione sia uno, pur essendo la definizione composta da più parti." It seems, from this passage and from Berti's commentary, that already in Z 12 this difficulty concerning the Platonic definitions is being directed by Aristotle toward a solution – and, moreover, toward one of a hylomorphic kind.

similar point elsewhere. In *Metaphysics* N[21] he reproaches the Academics for treating every *archē* as though it were a *stoicheion*. Stephen Menn has also argued that *Metaphysics* Z 13-16 criticizes both the materialists and the Platonists for attempting to analyze things into *stoicheia* in order to arrive at first principles.[22] If Aristotle regards the Academic principles themselves as functioning like elements, it becomes easier to understand why he accuses both schools alike of reducing substance to matter.

This raises an intriguing possibility. It is conceivable that, within the Academy or in its immediate intellectual environment, an extensive debate took place concerning the proper objects and methods of knowledge, comparable to the discussion reflected in the *Theaetetus*. Platonists, Antistheneans, proponents of the Dream Theory, and Aristotle himself may all have participated in that debate, either directly or indirectly.

Aristotle repeatedly agrees that only composite entities admit of a *logos*, a point that is abundantly documented and explicitly reaffirmed in point [iv] of the Antisthenean aporia. What distinguishes him from the other participants is not this principle itself but his conviction that none of the existing theories could explain the unity of the composite substance. This explains why the Antisthenean aporia occupies such an important place at this stage of the argument. Aristotle introduces it not as an isolated doxography but as a decisive moment in the reformulation of earlier theories of definition.

One final observation may be added. In the Dream Theory as presented in the *Theaetetus*, the elements occupy center stage. The Dream Theory begins with the assertion that "the elements of which we and all other things consist are such that no account (*logos*) can be given of them" (201e1-3), thus making the elements appear philosophically prior to the compounds they constitute, even though only the latter possess a *logos*. Aristotle reverses this perspective. For him, the compound is primary because the whole is not identical with the mere sum of its elements; it is constituted as a unity

[21] N 4.1092a5-9: ταῦτα δὴ πάντα συμβαίνει, τὸ μὲν ὅτι ἀρχὴν πᾶσαν στοιχεῖον ποιοῦσι.
[22] Menn (2011) p. 186 and Menn, *The Aims and the Argument of Aristotle's Metaphysic* (draft).

through form. The Dream Theory adopts precisely the opposite position, since no formal principle enters into its account of composition.

Does Plato himself offer an alternative conception of the relation between whole and parts? In fact, he does, and it is found in the *Theaetetus* itself.[23] Yet, after being briefly suggested and discussed, this alternative is abandoned by the dramatic Socrates. The issue deserves a much fuller treatment than can be offered here, and I shall therefore leave it aside.

5. Criticizing in Order to Reform

If the interpretation proposed above is correct, Aristotle did not merely criticize compositional theories of definition such as the Dream Theory. He also appropriated one of their central insights and transformed it into a fundamental component of his own theory of definition. This raises an obvious question: why does Aristotle subject these theories to such a careful and systematic critique in H 3.1043b4-14?

His procedure differs significantly from Plato's treatment of the Dream Theory in the *Theaetetus*. Plato introduces the theory, examines it briefly, and ultimately rejects it as inadequate. Aristotle adopts a different strategy. He criticizes this kind of theory not in order to discard it, but in order to reform it and incorporate what he regards as its valid insights into his own philosophical framework.

The principal weakness of the Dream Theory lies in its inability to explain the unity of composite substance. A definition becomes nothing more than a list or aggregation of constituent elements, all of which are material and all of which stand on the same level. No internal hierarchy or organizing principle emerges from such an account. Consequently, the unity of the composite is either entirely absent, like that of a heap, or exceedingly weak, like the unity of the *Iliad*, understood merely as a succession of books (H 6.1045a12-14).

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[23] 204b2-3; see Ferrari (2011) p. 112; he also adds, pp. 112-3, that: "l'intero argomento con cui Socrate respinge la distinzione tra *pan* e *holon* appare problematica e non dovrebbe rispecchiare il punto di vista filosofico dell'autore." Ferrari, in addition, cites the section of the *Parmenides* which examines the consequences that affect "the others from the one" in the hypothesis that "the one is" (157b6-159b1).

Yet this very theory also possesses features that Aristotle considers philosophically valuable. By locating the *logos* in composite entities rather than in separate Forms, it distances itself from an ontology restricted to intelligible realities and makes it possible to recover sensible things as genuine objects of scientific knowledge. Aristotle therefore does not seek to abandon this approach but instead to transform it. The Antisthenean aporia provides the dialectical instrument through which this transformation is achieved.

The same strategy may also characterize Aristotle's treatment of the Platonists. He criticizes them, not simply to refute them, but to reformulate their insights within a new conceptual framework. Aristotle owed an immense philosophical debt to Plato, and his own metaphysics may in many respects be understood as a profound reform of Platonism. The sustained criticism of Platonic doctrines throughout the *Metaphysics* should therefore be interpreted not merely as polemical opposition but as the means through which Aristotle develops his own philosophical alternative.

6. Reading the Antisthenean Aporia

Now that all this has been clarified, we may return to the text of the Antisthenean aporia (*Metaphysics* H 3.1043b23-32).

[i] Therefore [*hoste*] the aporia in which the followers of Antisthenes [*ēporoun*][24] and other such uneducated people struggled has a certain appropriateness.

The first *hōste* introduces the entire first movement of the passage, comprising points [i], [ii], and [iii]. Now that its antecedent (in 1043b4-14) has been examined, we are in a position to understand why Aristotle says that this aporia "has a certain appropriateness" (*echei tina kairon*). His point is the following: if we fail to grasp the *what-it-is* of a thing – as, in Aristotle's view, both the materialists and the Platonists have failed to do – then we cannot formulate an adequate definition. The inevitable consequence is that we are not able to produce scientific level knowledge, as happened to the Antistheneans.

[24] Barnes translates the imperfect *ēporoun* as "was raised", like Berti ("sollevavano"). I depart from both, because, as I shall explain below, they overlook that, according to Aristotle, the Antisthenians found no way out.

Why, however, does Aristotle describe their position as an *aporia*? It is unlikely that he means an aporia deliberately posed by the Antistheneans to challenge their opponents. Rather, he presents it as a difficulty from which they themselves are unable to escape.

Points [ii] and [iii] unquestionably report the Antisthenean position and therefore constitute a valuable Aristotelian testimony concerning their epistemology. For this reason, we will have to dwell on it longer.

[ii] when they stated that the 'what' cannot be defined [*horisasthai*] (for the definition so called is a long formula) (1043b25-26).

For the Antistheneans, essence – the *what-it-is* or the 'what' – is merely a mental conception (*noēma en psychais*) and possesses no independent reality. Knowledge therefore cannot be grounded upon it. This alone would suffice to explain why essence cannot be defined. Yet Aristotle reports a different justification: "for definition is a long formula."

The reason, I suggest, is that essence, understood as the Platonic Form, is itself simple. Precisely because it is simple, it lacks a *logos*.[25] It can therefore possess only a name. This supports the interpretation advanced by Bostock and others: any predication, which is necessarily a combination of words, is already "too long" for what can only be named. At the same time, since a simple entity cannot itself be demonstrated, any attempt to define it inevitably generates an infinite regress, an explanation that accords with Malink's interpretation[26].

[iii] but of what *sort* a thing [*poion ti esti*], e.g. silver, is, they thought it possible to teach [*didaxai*],[27] not saying what it is, but that it is like tin (1043b26-28).

[25] Berti (2017) p. 363 n. 23, says: "Come ha mostrato Brancacci, 1990, p. 228, Antistene sosteneva contro i Platonici che, se le Forme sono Idee, non è possibile definirle, ma solo indicarle col proprio nome, perché la definizione è composta da più parole, mentre le Idee sono semplici (così riferisce anche Platone in *Theaet*. 201e-202c. Qui Aristotele dà ragione ad Antistene contro i Platonici, pur ritenendo che la definizione sia possibile, a condizione di non intenderla come enumerazione di una serie di componenti materiali."

[26] For the position of Bostock and Malink see *supra*, n. 11.

[27] Textual problems have been noted in this passage; see Brancacci (1990) p. 232 n. 12.

If point [ii] tells us what Antisthenean doctrine rejects, point [iii] tells us what it accepts. What can be taught is not the *ti esti* of a thing but only its *poion ti esti*.

An immediate question arises. Is Aristotle himself replacing *horisasthai* ("to define") with *didaxai* ("to teach"), or is he faithfully reproducing Antisthenean terminology? Did the Antistheneans themselves regard this kind of account as a definition?[28] The text does not enable us to answer this question with certainty. What is clear is that Aristotle himself does not regard it as a genuine definition, since for him only an account expressing essence deserves that designation.

The contrast between *ti esti* and *poion ti esti* is, however, highly significant. It suggests an epistemological position in which qualitative characterization takes the place of essential definition. This interpretation may be illuminated by another Aristotelian testimony. In *Metaphysics* Δ 29 Aristotle reports that Antisthenes held that each thing possesses its own *oikeios logos*, its proper account. Aristotle does not explicitly identify this *oikeios logos* with the kind of account implied by the ποῖον μέν τί ἐστιν in H 3. Nevertheless, the two passages appear closely related, and Brancacci has argued that they should be read in connection with one another.[29] Whether they ultimately refer to exactly the same notion need not be decided here. For the purposes of the present argument, it is sufficient that they point in the same epistemological direction.

Such an account is consistent with an anti-essentialist conception of knowledge. The Antistheneans reject the abstract entities presupposed by Platonic essentialism and therefore also reject definitions grounded upon them.[30]

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[28] The surviving evidence does not allow us to determine whether the Antistheneans themselves regarded such accounts as *horismoi* or reserved another designation for them. Aristotle's terminology may reflect either his own reformulation or that of his opponents.

[29] For the relationship between *Metaphysics* H 3 and Δ 29, see especially Brancacci, who interprets the two passages as complementary evidence for Antisthenes's conception of *logos*. The present argument adopts this connection as a working hypothesis, while recognizing that Aristotle nowhere explicitly identifies the *oikeios logos* of Δ 29 with the account answering the question *poion ti esti* in H 3.

[30] Thus, Antisthenes appears to prefer concrete qualitative expressions such as *leukos*, *simos*, or *koilos* rather than abstract formations such as *leukotēs*, *simotēs*, or *koilotēs*. Whether this

Aristotle illustrates this with the example of silver. One cannot say what silver is, but only that it is like tin. The account therefore takes the form of a comparison rather than of an essential definition.[31] From Aristotle's point of view this immediately reveals its limitation.[32] A comparison may help us recognize something, but it cannot explain essence or provide the basis for scientific knowledge.

This example should probably not be taken as representative of the whole of Antisthenean epistemology. Aristotle's purpose is dialectical rather than historical.[33] He selects the simplest possible illustration because it best serves his argument against non-essentialist theories of definition. Other evidence, particularly Xenophon's testimony,[34] suggests that Antisthenes also employed accounts of virtues and social functions that possess genuine explanatory and educational value, even though they remain independent of essential definitions.[35]

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preference reflects an explicit linguistic program or simply the anti-essentialist orientation of early Socratic philosophy remains debated.

[31] Comparison constitutes one of the oldest cognitive devices in Greek culture, abundantly represented already in Homeric poetry and later retained in rhetorical and poetic discourse. Aristotle's choice of this example may therefore be deliberate: it illustrates a mode of cognition that precedes philosophical definition.

[32] Brancacci (1990) appears to find the example of silver somewhat problematic, since he expresses doubts about its specifically Antisthenean origin. As he observes (p. 231 n. 9), "one cannot be certain that the example of silver at 1043b27-28 derives from a work of Antisthenes or is specifically attributable to him. The fact that Aristotle refers here to a group of philosophers (this being the only passage in which he speaks of Antistheneioi, who are moreover associated with other οὕτως ἀπαίδευτοι) rather suggests the opposite." In effect, Brancacci's remarks invite us either to attach little evidential weight to the example or even to regard it as a candidate for athetesis.

[33] If we attempt to reconstruct how an Antisthenean account answering the question *poion ti esti* might have been applied to composite entities, we can imagine formulations quite different from Aristotle's example of silver. Such reconstructions, however, necessarily remain speculative, since no explicit examples survive. They are therefore omitted from the main argument.

[34] Xen. *Mem.* IV 6, 10-11: "Courageous are those who know how to handle dangerous and frightening situations properly" (οἱ ἐπιστάμενοι τοῖς δεινοῖς τε καὶ ἐπικινδύνοις καλῶς χρῆσθαι ἀνδρεῖοί εἰσιν).

[35] The surviving Socratic literature suggests that Antisthenes's primary concern was ethical education rather than the scientific classification of nature. This broader context helps explain why the extant examples of his *logoi* concern virtues, practical conduct, and social functions rather than natural kinds).

This conclusion cannot be drawn from Aristotle's brief remarks alone. It emerges only when his testimony is supplemented by evidence from other sources. In this respect, Aristotle does not say enough. My reconstruction allows us to recognize that the *logos* of the *poion* fulfilled a genuine function within Antisthenean philosophy. By rejecting Platonic essences, the Antistheneans did not abandon knowledge itself. They maintained instead that knowledge is acquired through the perception of *poia*, that is, of the various perceptible characteristics distinguishing one entity from another. A given object possesses certain characteristics, other objects possess different ones, and these perceptible differences suffice to distinguish the various constituents of the sensible world.

Measured against an essentialist conception of science, such knowledge is undoubtedly inferior. Yet there is every reason to believe that, for the Antistheneans themselves, it was perfectly adequate for its intended purpose. Once essences have been abandoned, the notion of substance likewise disappears. The different characteristics of things – what Aristotle would later classify under the remaining categories – are all treated simply as *poia*. None of these implications, however, receives further attention in Aristotle's discussion.

With this, the first – and properly aporetic – part of the Antisthenean aporia has been completed. We may now turn to its second movement.

7. The Second Movement of the Aporia

From this point onward, the discussion becomes increasingly constructive. Aristotle no longer dwells on criticism but progressively develops his own account.

[iv] Therefore [host'] one kind of substance can be defined and formulated, i.e. the composite kind, whether it be the object of sense or of reason (1043b28-30).

The second *hōste* introduces the second movement of the argument. Some interpreters maintain that the whole sequence comprising points [iv], [v], and [vi] cannot express Aristotle's own position[36]. I find this view difficult

[36] Brancacci (1990) p. 237: "Non può certo essere riferita ad Aristotele la tesi enunciata in questo passo, posto che, come già è stato osservato, la sostanza di cui qui si parla 'non è quella che altrove

to sustain for these reasons: 1) here [iv], Aristotle explicitly states that only composite substance admits of definition. The very use of the term "substance" (*ousia*) shows that the discussion has returned to the definition of the *what-it-is*. By contrast, the immediately preceding Antisthenean position admitted only a teaching of the *poion ti esti*, illustrated by the example of silver, which is certainly not a composite substance. 2) The conceptual vocabulary of the passage is unmistakably Aristotelian. 3) Anyone who attributes the whole second movement of the passage to the Antistheneans would be forced to assume that they possessed the notion of form, which will be introduced below in [vi]; but this assumption is incompatible with their explicit rejection of it, in [ii] e [iii]. The second part of the aporia therefore cannot be understood from an exclusively Antisthenean perspective.

Burnyeat regarded this second *hōste* as obscure.[37] In my view, however, its logical function is entirely clear. Having presented the aporetic Antisthenean position, Aristotle resumes his own argument and carries it to its conclusion by resolving the difficulty that puzzled the Antistheneans.

Point [iv] formulates a proposition capable of accommodating several different philosophical perspectives.

Composite entities thus possess a *logos*. The discussion has now reached a point on which several of the competing theories – the Platonists, the proponents of the Dream Theory, possibly the Antistheneans, and Aristotle himself – can converge, although they understand both composition and *logos* in very different ways. For this reason, the inferential force of the second *hōste* creates no difficulty. Its implicit meaning is: once the preceding discussion has been completed, we may conclude that composite substances admit of a definitional account, regardless of whether that account is conceived in essentialist or non-essentialist terms.

[v] but the primary constituents of which this consists cannot be defined (1043b30).

On this point, virtually all the participants in the debate could agree, with the possible exception of the Antistheneans. Aristotle has just reported that even

egli indica come composta di materia e forma, ma ogni sostanza genericamente composta di elementi'", v. anche Caizzi (1964) p. 51, who accepts the Aristotelian terminology.

[37] Burnyeat (1970) pp. 113-4.

silver, conceived as an irreducible element, admits of a qualitative *logos*. The "primary constituents" mentioned here are the ultimate components of composite substance. Depending on the philosophical theory in question, these may be material elements or, in the case of the Academics, genus and differentia understood as fundamental, though indivisible, constituents of definition.

Aristotle himself is perhaps more strongly committed than anyone else to this conclusion, since he repeatedly maintains that simple entities, whatever their nature, do not admit of definition. This principle is clearly affirmed both in *Metaphysics* Z 13 (1039a14-19) and in Θ 10 (1051b2-17).

Taken together, the two discussions in H 3 – Aristotle's criticism of the materialists and the Platonists (1043b4-14), and the Antisthenean aporia (1043b23-32) – create the impression of a genuine philosophical debate involving four interlocutors: two essentialists, Plato and Aristotle, and two non-essentialists, the proponents of the Dream Theory and the Antistheneans. Some criticize, while others are criticized. Aristotle criticizes both the Dream Theory and the Platonists in the earlier passage. At the beginning of the aporia, he allows the Antistheneans to attack the Platonists. He does not explicitly refute the Antistheneans but instead presents them in a deliberately unfavorable light. In the second movement of the aporia, he formulates two propositions that almost all the participants can accept, before arriving at the conclusion that constitutes his own solution.

The remarkable result is that all the participants in the debate, despite their profound disagreements, contribute dialectically to the emergence of Aristotle's own theory. In this sense, each position plays a necessary role within the overall argumentative strategy of the chapter.

[vi] since a definitory formula predicates something of something, and one part of the definition must play the part of matter and the other that of form (1043b30-32).

This final statement belongs exclusively to Aristotle. Here the argument reaches the mature formulation of hylomorphism: the doctrine that matter and form are mutually dependent principles of substance. Only through their relationship can both the unity of substance and the unity required of scientific definition be satisfactorily explained. The solution announced

here will not be fully developed until H 6, where Aristotle completes the account merely outlined at the end of the present chapter.

The Antisthenean aporia thus proves to be "timely" in a very precise sense. Aristotle requires an ally capable of exposing the inadequacy of the Platonic Forms as independent objects of knowledge, and the Antistheneans perform precisely this function. Once that criticism has served its purpose, however, Aristotle redirects the discussion toward composite substances, the only entities that genuinely admit of a *logos*, a point on which almost all the parties involved can agree.

Agreement ends there. For Aristotle, the decisive question is not whether composite substances possess a *logos*, but what kind of *logos* they possess. A genuine definitional account must be a predication, that is, it must signify something of something. Yet this predication cannot be merely qualitative, as in the Antisthenean account answering the question *poion ti esti*. It must instead be essential. Within that essential predication, one constituent functions as matter – the determinable and potential component – while the other functions as form (*morphē*), the determining and ultimately differentiating principle.

Aristotle's originality lies precisely in the way he transforms the competing theories of definition inherited from his predecessors. From the Dream Theory he retains the insight that only composite entities admit of a *logos*; from the Platonic tradition, the conviction that scientific knowledge requires an account of essence. Neither position, however, is accepted unchanged. Rather, Aristotle integrates what he considers to be philosophically sound in both into his hylomorphic conception of substance, which explains both the unity of the composite and the possibility of a genuinely scientific definition.

The Antisthenean aporia is not simply one more source on Antisthenes. It is the point at which Aristotle brings together the principal contemporary theories of definition, appropriates what each can contribute, and transforms them into the hylomorphic conception of substance. Read in this way, H 3 emerges not as a loosely connected chapter but as one of the most carefully constructed arguments of Books Z-H.

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MARTIN BAUDROUX

TIME AND SOUL: *PHYSICS* IV 14.223A21-29 IN NEOPLATONISM FROM PLOTINUS TO SIMPLICIUS

Abstract

This article examines the Neoplatonic reception of a few lines by Aristotle (*Ph.* 223a21-29) on the relationship between the soul and time. This reception begins with Plotinus, who engages critically in the debate between Boethus and Alexander. According to *Treatise 45* (*Enn.* III 7), the Aristotelians do not adequately conceive of the links between the soul and time: the soul does not measure time, but generates it in a demiurgic manner, through its own movement of thought. Rejected by Plotinus, the Aristotelian notion of measurement is reinstated by Iamblichus: Aristotle's error lies solely in failing to attribute ontological and demiurgic power to the soul and to its act of measuring time. Proclus goes even further in reinstating Aristotle: whilst criticising his lack of rigour (he does not move far enough up the chain of causes), he argues perfectly in *Ph.* 223a21-29. Proclus's reception is essential, paving the way for Simplicius's praise: in contrast to Iamblichus, he commends Aristotle for having elevated time beyond the sensible world, up to the soul. The Neoplatonic reception thus illustrates the complexity of the relationship with Aristotle among the Platonists of late antiquity: like Plato's demon, he is both an indispensable authority and a limited thinker who must be put in his place. The conceptual challenge, then, is to place the Aristotelian account of time in the service of *Timaeus* 37c-d.

Keywords

Aristotle, Neoplatonism, Time, Plato's *Timaeus*, Plotinus

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In a text as famous as it is challenging, Aristotle explores the relation between time and the soul. This passage appears at the end of *Ph.* IV 14, following the definition of time as the "number of motion with respect to before and after."[1] Within the overall structure of the *Physics*, it seems logical that the question of the soul should arise at this point. If time is a number, and even more a counted number (τὸ ἀριθμούμενον),[2] it seems necessary to posit a counting principle at its origin. Hence the question: must the existence of time depend on a soul that measures (or counts) it?

> One might find it a difficult question, whether if there were no soul there would be time or not. For it is impossible that there should be something to do the counting (τοῦ ἀριθμήσοντος), it is also impossible that anything should be countable (ἀριθμητόν τι), so that it is clear that there would be no number either (οὐδ' ἀριθμός), for number is either that which has been counted or that which can be (ἢ τὸ ἠριθμημένον ἢ τὸ ἀριθμητόν). But if there is nothing that has it in its nature to count except soul, and of soul [the part which is] intellect (νοῦς), then it is impossible that there should be time if there is no soul, except that there could be that X which time is, whatever X makes it what it is; as for example if it is possible for there to be change without soul. The before and after are in change, and time is these *qua* countable (ᾗ ἀριθμητά) (Arist. *Ph.* IV 14.223a21-29. Trans. Hussey 1993, p. 52).

The text is not entirely clear and has generated quite divergent interpretations within Aristotelian tradition.[3] The main controversy, as reconstructed by Marwan Rashed, Riccardo Chiaradonna and Johannes Zachhuber, sets Boethus of Sidon against Alexander of Aphrodisias.[4]

Boethus defends the idea that the number of time exists in itself, independently of the soul: "nothing prevents there being the enumerable (τὸ

[1] *Ph.* 219b1-2.
[2] *Ph.* 219b7-8.
[3] My interpretation would be as follows: since change can exist without the soul, since time exists alongside the order of change (the before and the after), and since there is a before and an after within change itself ("the before and after are in change"), time exists independently of the soul. But since time is the before and after insofar as it is 'countable', and since the soul, through its intellect, has the power to count, time has a special relation with the soul. Aristotle therefore refuses both to make time a reality produced by the soul and to render time heterogeneous with the soul.
[4] See Rashed (2011) pp. 69-74 and Zachhuber (2022) pp. 22-40. On Boethos' doctrine of time, see Chiaradonna and Rashed (2020) pp. 232-4.

ἀριθμητόν) quite apart from an enumerator (τοῦ ἀριθμοῦντος), as there can be the perceptible (τὸ αἰσθητόν) without a perceiver (τοῦ αἰσθανομένου)".[5] Even though, according to Themistius, Boethos claims that "no measure is produced by nature, but measuring and counting are from the ouset our own work", he attributes only to rational beings "the act of measuring and counting (τὸ μετρεῖν καὶ τὸ ἀριθμεῖν)".[6] Nature generates no measure: the measure of time exists essentially in the order of motion, which the human soul measures only *a posteriori*, through a specific act. This can be described as a kind of essentialist position: the soul does not produce time, but rather measures a temporal number that already exists in the world (prior to any act of counting). Alexander, on the other hand, rejects this view: he accepts that the substrate of time can exist without the soul, but this is not the case for time considered as something counted. The issue here concerns the category of relatives, to which "being counted" belongs:

> Perhaps the enumerable (ἀριθμητόν) will not exist, but that which is contingently capable of being enumerable (τὸ μὲν ᾧ συμβέβηκεν ἀριθμητῷ γίνεσθαι) will exist, such as horses or men, but not the enumerable *qua* enumerable (οὐ μὴν ἀριθμητὸν ὡς ἀριθμητόν). For in the case of other relatives, if, for instance, there is nobody on the right, he who was on the left, Socrates perhaps, will exist, but a person on the left will not. So, if time were enumerable (ἀριθμητός) as the before and after are enumerable (ὡς ἀριθμητά), if there were nothing to enumerate (μὴ ὄντος τοῦ ἀριθμήσοντος) there would be no time. But nothing prevents the substrate of time (τὸ μέντοι τῷ χρόνῳ ὑποκείμενον), which is change (ἡ κίνησις), from existing (Alex. *apud* Simpl. *In Phys.* 759, 29-760, 3. Trans. Urmson 2014, p. 173).

Socrates can remain Socrates even if no one stands to his right, but he cannot be "on the left" without a relation to something else. In the same way, the substrate of time can exist without a soul to measure it, but time as *counted* cannot exist independently of such an act of measurement. Moreover, in §16 of his treatise *On Time*, Alexander suggests that without a world-soul there would be no change at all:

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[5] Boeth. *apud* Simpl. *In Phys.* 759, 18-20. Trans. Urmson 2014, p. 173.

[6] ὥσπερ γὰρ φησι Βοηθός, οὐδὲν μέτρον ὑπὸ τῆς φύσεως γίνεται, ἀλλ' ἡμέτερον ἤδη καὶ τὸ μετρεῖν καὶ τὸ ἀριθμεῖν ἔργον ἐστίν (Boeth. *apud* Themist. *In Phys.* 163, 5-7). See Chiaradonna and Rashed (2020) p. 232.

If the soul, which numbers movement, were done away with, time would be done away with. And if the soul were done away with the heavenly sphere would not be moved; and if this were not moved all movements would be done away with, since it is the cause of all movements, and so of time (Alex. *On Time* §16, 95, 11-15. Trans. Sharples 1982).

One might therefore say that what Alexander calls "the substrate of time (τὸ [...] τῷ χρόνῳ ὑποκείμενον)"[7] depends on the world-soul, whereas time as counted arises from the measuring activity of individual souls.

Plotinus was aware of these debates and, in his own way, adopts a position within them. What I would like to show is that these few lines from Aristotle (*Ph.* IV 14.223a21-29) received sustained and particular attention within the Neoplatonic tradition, from Plotinus to Simplicius. In appearance, this Aristotelian text had everything needed to appeal to thinkers who elevate time above the sensible world and bodily reality. However, as we will see, the reception is more complex than expected. I will try to understand the Neoplatonic resistance, and even their underlying mistrust. I will also show how the Neoplatonic reception differs from the Peripatetic one, particularly that of Boethus and Alexander. Finally, I will try to demonstrate that, since Proclus, the Neoplatonic conception of time has positively incorporated this text. Proclus' mediation thus plays a crucial role and prepares the way for the judgment of Simplicius, who admires Aristotle for having elevated time to the level of the soul.

1. The Soul as the Demiurge of Time (Plotinus)

In *Treatise 45*, On Eternity and Time (*Enn.* III 7), Plotinus argues that the problem has been wrongly formulated:

Why indeed can time not exist even before the soul is there to measure it, unless one claims that it owes its generation to soul (Εἰ μή τις τὴν γένεσιν αὐτοῦ παρὰ ψυχῆς λέγοι γίνεσθαι)? For there is absolutely no need for time to owe its existence to the soul's measuring it. For a thing exists as the size it is, even if no one measures it (Plot. *Enn.* III 7, 9, 79-82. Trans. Gerson 2018, p. 346).

[7] Alex. *apud* Simpl. *In Phys.* 760, 3.

Plotinus clearly has in mind the Aristotelian lines we have just read. But rather than treating Aristotle as a predecessor to be extended, he rejects the very terms of the debate. The mistake, for Plotinus, lies in trying to derive time from the soul's act of *measurement*. Thus, he opposes the logic of *genesis* to that of *metron*. As long as one conceives the soul as a measuring power, as Aristotle does in *Ph.* IV 14, one fails to understand how time could arise from it. For the object of measurement – the magnitude – exists prior to, and independently of, the subject who measures it. One cannot therefore say that the soul brings time into existence by measuring it.

Rather than asking whether time can exist without being measured by the soul, the real question is whether the soul generates time and, if it does, how. This is precisely what Plotinus asks in *Treatise 45* (*Enn.* III 7). As he explains, the world-soul, in producing the cosmos and translating intelligible Forms into the sensible realm, unfolds itself in thought, and this very unfolding is time:

> The soul [...] as it produces (ποιοῦσα), in imitation of the intelligible world, a sensible universe which moves not with the motion found in the intelligible world, but one that aims to have the sameness of an image (ἐθέλουσαν εἰκόνα ἐκείνης εἶναι), temporalized itself (ἑαυτὴν ἐχρόνωσεν) by creating (ποιήσασα) time in place of eternity (*Enn.* III 7, 11, 27-30. Trans. Gerson 2018, p. 348).

Plotinus therefore does not exactly attempt to solve the Aristotelian aporia; he shows instead that the aporia is misconceived and, adopting a different conceptual framework, presents his own doctrine as an interpretation of Plato's *Timaeus* (37c-d). Aristotle's mistake was not to have followed Plato in positing a *demiurgy of time*, namely an efficient cause underlying time itself. Although he comes close to identifying the cause of time (the soul), he nevertheless fails to conceive it as a demiurgic power. This, however, is precisely what Plotinus accomplishes (following Plato): he claims that, in bringing forth the world, the world-soul temporalizes its own thought and, in temporalizing its own thought, gives rise to the time of the world. The world-soul is thereby identified with the Demiurge of the *Timaeus*, while primordial time is understood as the (psychic) movement of its thought – a movement within which the sensible world comes into existence and from

which it derives its own mobility. The soul does not measure time, it produces time without any preconceived plan, but simply by transposing the eternal Forms into the sensible realm, thereby imitating eternity.

The critique of *Ph.* IV 14 is thus representative of the main objection Plotinus raises against Aristotelian accounts of time: the reduction of *Chronos* to measure and number. For Plotinus, number and measure are only manifestations of time, not its essence, which is *demiurgic* – time, as born from a demiurge, is produced by the world-soul and, as itself demiurgic, develops the eternal Forms – and *psychic* (time is the thinking life of the soul). As suggested in *Treatise 45*, they are derived expressions of it and this is precisely what *Timaeus* 47a indicates: time is made visible through the movement of the stars and the sun, produced by the Demiurge, but it is not essentially what the soul measures when it observes the heavens.[8]

Time, for Plotinus, is thus a psychic and demiurgic motion.[9] According to him, Aristotle situates the question of soul and time on a *superficial* level – namely that of measurement – which is ultimately secondary and derivative. Plotinus may be read as responding to crucial questions that Peripatetic interpreters in Roman time addressed in different ways, while at the same time subverting their very terms. From this perspective, what is required is a genuine account of how the soul generates time, because measurement alone is insufficient to constitute it – that is, to make time what it is as time.

This criticism – that the approach isn't ontological enough – is something Iamblichus, a Syrian Neoplatonist philosopher and contemporary of Porphyry, also directs at Aristotle.[10] At the same time, though, unlike Plotinus, he revalues the Aristotelian ideas of measure and number. This represents a decisive step in the Neoplatonic reception of *Ph.* IV 14.

[8] Plot. *Enn.* III 7, 12, 25-43. See Michalewski (2021).
[9] And we might add that it is a dynamic movement. Time is indeed generated by a power of the soul (*Enn.* III 7, 11, 20-21). See Michalewski (2022).
[10] On Iamblichus, see Chiaradonna and Lecerf (2023).

2. The Ontological Power of Measurement (Iamblichus)

From Iamblichus onward, we see a revival of Pythagoreanism within Neoplatonism.[11] He argues that Aristotle's entire account of time ultimately derives from the Pythagorean thinker Archytas of Tarentum. According to Iamblichus, Archytas (in fact pseudo-Archytas) has written a treatise titled *On Categories* or *On the Reason of the Universe*, which Aristotle's *Physics* would imitate.[12] In that treatise, Archytas defines time as the number of a certain kind of motion, and identifies that motion with the substantial motion of the soul:

> In conveying the nature of time more theoretically, Iamblichus again chooses as his guide (ἡγεμόνα) Archytas, who says that "time is the number of a certain movement (κινάσιός τινος ἀριθμός) or, more generally, the extension of the nature of the universe too" [...]. He [*scil.* Archytas] did not say that time is the number of *all* movement (κινήσεως ἀριθμὸν τῆς πάσης), as Aristotle defined it, but rather [the number] of a *certain* movement (κινήσεως τινός) – not [the movement] of one of the *particulars*, such as the [movement] of the heavens or that of the sun or of some other definite thing among the particulars, since on that basis time would not be of the nature of a principle (ἀρχοειδὴς), nor would it extend commonly to everything, nor would it deserve to be defined among the primary genera. Instead, by means of this [definition], [Archytas] altogether expresses a movement which is of the nature of a principle (ἀρχοειδῆ) and is the cause of being (τοῦ εἶναι αἰτίαν) for the other movements. [...] In consequence it is plausible that [Archytas] is, by means of theses [characterisations], expressing the substantial movement of the soul (τὴν οὐσιώδη τῆς ψυχῆς κίνησιν), and the projection [into the world] of the principles belonging to it by virtue of its substance (τὴν τῶν κατ' οὐσίαν ὑπαρχόντων αὐτῇ λόγων προβολήν) (Iambl. *apud* Simpl. *In Cat.* 350, 10-30. Trans. Gaskin 2013, p. 83).

On this view, Aristotle ends up weakening Archytas' doctrine. For Archytas, time is the number of a motion internal to the substance of the world-soul, understood as self-moving and self-constituting.[13] Time as number is generated within the very being of the world-soul, which constitutes itself through its own motion, according to a Pythagorean doctrine that Plato expresses in the *Phaedrus*. The number of time is therefore fundamental

[11] O'Meara (1989).
[12] See Hoffmann (1980) and Macris (2002).
[13] On the (substantial) self-motion of the soul, see Opsomer (2012) and Taormina (1997).

and determining: it brings about the order of change in the world, structuring and organizing it. In that sense, it has a kind of demiurgic power. In constituting itself through a substantial self-motion, the world-soul generates a primordial and ordering form of time. Time is therefore itself substantial: it confers being upon sensible motions and grounds the measure and order governing those motions. It makes the world possible in its very nature as a cosmos. The Pythagorean conception of time thus possesses an ontological (or demiurgic) power – it brings ordered movements into existence – whereas the Aristotelian conception of time emerges from movements that are already ordered and structured. Whereas, in Archytas, time brings into being the "before" and "after" of motion, in Aristotle these "before" and "after" arise from the continuity of sensible motion itself, which is taken as given:

> And he [*scil*. Archytas] says that its number is the one which is at this moment generative (γενεσιουργόν), proceeding to the creation (προϊόντα εἰς ποίησιν) of the things in the world [...]. This differs considerably from the number [of movement] referred to by Aristotle: for he considers it to be an externally supervening measure (μέτρον [...] ἔξωθεν ἐπιγινόμενον) of what is continuous, whereas Archytas establishes it as a measure of movement itself, inherent [in it] (αὐτοφυές) and not external [to it] (οὐκ ἔξωθεν), as Aristotle [thinks] (Iambl. *apud* Simpl. *In Cat.* 350, 32-351, 4. Trans. Gaskin 2013, pp. 83-4).

For Archytas, the number of time is *genesiourgos*, producer of becoming. The world-soul thus generates the number of time by generating itself, and this number of time is the origin of all temporal measures – or orders of development – in the world. It is, for example, what accounts for the succession of life stages: first childhood, then adolescence, and finally adulthood. Aristotle instead conceives of time as emerging from motion insofar as motion exhibits a determinate before and after. Motion, with its inherent continuity, pre-exists the number of time; it is not the number of time that generates this continuity.

Iamblichus thus reproaches Aristotle for lacking an ontological conception of the relation between measure, soul, and time. The issue is not the notion of measure itself, as Plotinus believed. Rather, the problem is that Aristotle does not grant measure any ontological power – any generative capacity. He treats number and measure as attributes that result from motion,

rather than as principles that make motion possible. Aristotle, though inspired by Archytas, thereby weakens the Pythagorean doctrine of number:

> The Peripatetic opinion seems to have deviated (παρατετράφθαι) from the Pythagorean instruction. The reason for this is that the recent [thinkers] (οἱ νεώτεροι) have not held the same view of number and movement as the ancients, but think that they are accidents (συμβεβηκότα), and consider them to be externally adventitious, whereas [the ancients] regard them as substantial (οὐσιώδη) (Iambl. *apud* Simpl. *In Cat.* 351, 4-8. Trans. Gaskin 2013, p. 84).

From this perspective, when Aristotle asks whether time exists by virtue of being measured by the soul, this reveals the weakness of his conception of number. As Archytas saw, the soul ought to have been introduced from the outset, at the very moment of defining time. For Archytas, time is the number of the substantial motion of the world-soul. It exists in its *ousia* and, as such, is a principle of the order of motion. Like in Plotinus, it possesses a demiurgic power.

For Iamblichus, then, the aporia of *Ph.* IV 14 is fundamentally misformulated. Aristotle and the Peripatetics attempt to derive time from the soul's act of measurement, but without an ontological conception of number and measure. Neither Boethus nor Alexander is correct, since both presuppose that measure applies to an already ordered change that would pre-exist it. This is not the case for Iamblichus as a reader of Archytas: the number of the soul – i.e. time – is a substantial principle that brings into existence ordered change according to before and after.

Aristotle would have conceived both the soul and time in a superficial manner. But through this critique, Iamblichus reintroduces into his concept of time the Aristotelian notions of measure and number, which Plotinus had relegated to a secondary role. From Iamblichus onward, in late Neoplatonism, measure and number belong to the very essence of time, and not merely to its manifestation. Thus, he reintegrates the Aristotelian concepts, and terminology, incorporating them into the Neoplatonic conception of time.

This tendency (to reappropriate the Aristotelian thought of time while simultaneously criticizing it) becomes even stronger in Proclus. Proclus takes up much of what is said by Aristotle, and his critique no longer targets the terms of *Ph.* IV 14, but only his softness, his lack of metaphysical ambition.

3. Aristotle's Softness and Rightness (Proclus)

In his *Commentary on the Timaeus*, Proclus, in reference to *Ph.* IV 14, accuses Aristotle of *malakia*, softness.

> Now Aristotle defined time as the number of motion, not the number *with which* we count (κατὰ τὸ ἀριθμοῦν), but that which *gets counted* (κατὰ τὸ ἀριθμητόν). Given this definition he quite plausibly inquired what it is that does the counting, since time is that which gets counted (for these things are relatives and if the one exists, then so too does the other), but his resolution of this problem is insufficiently bold (καὶ ἔλυσε μαλακῶς) since he said that some *soul* is that which does the counting, for it is necessary for there to be that which *does the counting* eternally prior to the eternal number [that gets counted] in order that it should always make it, since what comes to be [as a result of the counting] always exists (Procl. *In Ti.* III 9, 21-10, 2. Trans. Baltzly 2013, p. 53).

Proclus analyses the reasoning of *Ph.* IV 14 as follows: since time is counted, there must be a counting principle. Proclus does not at all reject this Aristotelian reasoning, as will be seen. He merely reproaches Aristotle for not having ascended high enough in the hierarchy of reality. Aristotle, in fact, stops at the level of the soul: the principle that numbers time would thus be the soul. Proclus condemns this resolution of the aporia – namely, that the soul brings time into being by numbering it – as *malakia* (softness). Aristotle, in his view, does not sustain the philosophical effort far enough; he does not rise high enough in the chain of causes.

Proclus is therefore more appreciative of Aristotle's inquiry than Plotinus and Iamblichus. Aristotle is right in his reasoning: if there is counted time in the world, there must be a counting principle at its origin. Elsewhere, Proclus even goes further by taking up the Aristotelian reasoning for his own account:

> Third, if time is something that is in fact subject to being counted, it is necessary that what does the counting (τὸ ἀριθμοῦν) should pre-exist prior to what gets counted (πρὸ τοῦ ἀριθμητοῦ [...] προυπάρχειν)(for these things are said to be [what they are] in relation to one another and what does the counting pre-exists prior to that which gets counted). That which potentially counts is prior to what is potentially counted, while that which actually counts is prior to what is actually counted. Accordingly, this is what time is in reality (ἐκεῖνο τοίνυν ὁ τῷ ὄντι χρόνος): the Number Itself (αὐτοαριθμός) which [counts] each of the numbers of all the periods [of time found within the cosmos] (Procl. *In Ti.* III 32, 21-27. Trans. Baltzly 2013, p. 86).

The counting principle from which time proceeds is not the soul, but Number-in-itself, of which Socrates speaks in the *Republic* (VII 529d):

> But since visible time (ὁ χρόνος ὁ ἐμφανής) revolves according to number (κατ' ἀριθμόν), as the *Timaeus* [38a7-8] says, the number of revolutions would be prior to this (πρὸ τούτου), since it concerns the return of the whole cycle [to its starting point]. If that [Perfect Number] were in the realm of generation, it will again be so in accordance with another number and [so on] into infinity. If, however, there is a number that independently always exists and is a cause of time that revolves in accordance with number, since this number is intellective (νοερός) and is thus a king of time that is like an Intelligible choreographer, it will be the cause of the dance for the cosmos since the circular return to its starting point <is called> a dance. In the seventh book of the *Republic* Socrates <named> it 'the true number' (ἀληθινὸν ἀριθμόν) (Procl. *In R.* II 17, 17-18. Trans. Baltzly, Finamore and Miles 2022, p. 222).

Proclus implicitly uses Aristotelian reasoning to clarify the claim, in the *Timaeus*, that time is measured according to number. If the time of the world is visible and measurable through the movement of the stars, this number must nevertheless pre-exist cosmic time itself, as Aristotle showed. But, according to Proclus, this Number-principle, or Number-in-itself, cannot arise together with the soul, since the soul – even the soul of the world – requires time to carry out its activity.[14] The soul depends on Time and cannot generate it. For Proclus, this Number is "intellective" (*noeric*): it is an intellectual power inscribed within the series of the Demiurge.[15] It organises the intelligible Forms by providing them with measures, thereby making them models for sensible motions. The text of *Ph.* IV 14 is thus used to demonstrate the existence of a substantial and Platonic conception of time, in terms that Aristotle would never have accepted.

We thus see how Proclus represents a double and somewhat ambiguous moment in the reception of the aporia in *Ph.* IV 14. On the one hand, he reproaches Aristotle for his softness: like Plotinus and Iamblichus, Proclus holds that Aristotle does not go far enough. On the other hand, he considers Aristotle's reasoning to be correct: if the time of the world is a counted number, there must be a counting principle at its origin. This number-in-itself is intellective and substantial Time, of which Plato speaks

[14] See Procl. *In Ti.* III 22, 13-28.
[15] See Procl. *In R.* II 17, 17-18, 14, and *In Ti.* III 89, 32-90, 17.

in the *Timaeus* (37c-d, 38a) and in the *Republic* (VII 529d). Aristotle's argument is thus placed in the service of a thought that claims to be Platonic. This status of Aristotle – as serving or assisting Plato – is consistent with the place Proclus assigns him, namely that of Plato's "daemon".[16] Like any daemon, Aristotle is an auxiliary, a mediating figure between gods and humans, here between the divine Plato and us. This praise of Aristotle becomes even stronger in Simplicius.

4. "I Admire the Following Feature of Aristotle's Sagacity" (Simplicius)

We thus arrive at the position of Simplicius, the only Neoplatonist commentator to explicitly praise Aristotle for having related time to the soul:

> But I admire (θαυμάζω) the following feature of Aristotle's sagacity, namely how he too posited the soul as the proximate cause of time (αἰτίαν τοῦ χρόνου προσεχῆ): for in seeking what it is which *numbers* [time], he talked of the soul. For if the soul is the origin and cause of all movement – whether *qua* self-moving, as Plato thought, or *qua* unmoved, as Aristotle thought – it will also, in all probability, be the cause of *temporal* movement (Simpl. *In Cat.* 351, 8-13. Trans. Gaskin 2013, p. 84).

Simplicius here opposes Iamblichus, who (as we have seen) judges the Aristotelian doctrine to be weakened and derivative in comparison with that of Archytas. Rather than opposing Aristotle to Platonic truth, the two must be reconciled: Aristotle "himself," like Plotinus and like Archytas, makes the soul the cause of time. Simplicius interprets *Ph.* IV 14 in the following way: if the soul produces motions, it must also be the cause of temporal motion. He relies on a particular passage to argue that, for Aristotle, there can be no change without the soul:

> So Aristotle reasonably says that, if the soul *qua* enumerator is abolished time will be abolished *qua* enumerable; but he shows that, if it were abolished *qua* the principle of coming to be and change (ἀρχῆς γενέσεως καὶ κινήσεως), both change and coming to be would be abolished, by "if it is possible for there to be change without soul" (εἰ ἐνδέχεται κίνησιν εἶναι ἄνευ ψυχῆς). But not only is time, being an aspect of change abolished together with the

[16] See Procl. *In Ti.* III 54, 33 and 262, 19.

abolition of change, but, since it itself has its being essentially in becoming, it will be abolished together with the abolition of soul, which is the acknowledged cause of all change and becoming (Simpl. *In Phys.* 760, 33-761, 5. Trans. Urmson 2014, p. 174).

This interpretation runs counter to the very wording of Aristotle's text. In the context of the latter, the line quoted by Simplicius ("if it is possible for there to be change without soul") forms part of an argument designed to show that change exists independently of the soul, so that time, which is the before and after of change, itself exists independently of the soul. In a manner at once explicit and open to debate, Simplicius strives to reconcile Aristotle (*Ph.* 223a27-28) and Plato (*Phdr.* 245c):

Note how here, also, Aristotle wrote in accord (σύμφωνα) with our leader. He himself wrote "if it is possible for there to be change without soul", i.e. without the changer, while the other said that for other things that change the soul is the "source and principle", and that from this principle everything in becoming comes to be (Simpl. *In Phys.* 761, 5-9. Trans. Urmson 2014, p. 174)

According to this original interpretation of Aristotle's text, the soul is the ontological cause of all changes in the world. However, since Aristotelian time has its being in becoming, it cannot exist without the soul. From this perspective, the *Physics* would maintain both that there is a soul that brings about changes in the world and that this soul brings about time. The only (but major) difference between Plato and Aristotle is that the Platonic soul is self-moving, whereas the Aristotelian soul does not move itself. According to Simplicius, there would be an Aristotelian world-soul, cause of all the changes in the universe, and that soul would be the ontological cause of time. The (individual) soul's measurement of time would only be the cause of measured time. Aristotle would thus be closer to Plotinus' *Treatise 45* (*Enn.* III 7) that himself thought.

In a way that is both more assertive and more explicit, Simplicius thus seeks to reconcile Aristotle with the Neoplatonic conception of time. He insists less on Aristotle's softness, as Plotinus, Iamblichus and Proclus do, and more on the importance of having understood the role of the soul in the constitution of time.

Conclusion

To sum up, Plotinus and Iamblichus both remain wary of *Ph.* IV 14 because they consider this text insufficiently *ontological*. For Plotinus, the problem lies in the notion of psychological measurement: it says nothing about the nature of time and does not allow anything to come into being. For Iamblichus, the issue likewise concerns measurement, though not in itself. Aristotle is right to define time as a measure; however, he weakens the doctrine of Archytas by treating number not as a principle, but as an attribute or accident of motion.

These critiques play a positive role in the Neoplatonic reception of this text. Plotinus is the first to discuss it and thereby enters the Boethus-Alexander debate. Iamblichus, in turn, rehabilitates the notions of measure and number to think the constitution of time through the soul.

One final barrier to the praise of Aristotle remains: the objection that he is not sufficiently ontological.

This objection disappears with Proclus, who reads this text in an explicitly ontological way. He reproaches Aristotle only for his softness. Moreover, he even uses *Ph.* IV 14 to demonstrate the existence of a substantial, demiurgic, and, in his view, Platonic Time.

This tradition therefore culminates in Simplicius' praise of Aristotle. In the end, Neoplatonism comes to view Aristotle as an ally – not someone who fully grasps the whole truth about time or reaches its highest principles, but still a philosopher far superior to earlier schools like Stoicism and Epicureanism, which, as Proclus puts it, reduce time to a mere accident of motion.[17]

It therefore seems fair to say that, in Neoplatonism, criticising Aristotle was itself a way of receiving his thought. By criticising *Ph.* IV 14 and entering the Boethus-Alexander debate, Plotinus brings these few Aristotelian lines into the Neoplatonic tradition and begins an ongoing dialogue with them. Over the centuries, that dialogue becomes increasingly sophisticated and, through a series of critiques, eventually turns into genuine praise.

[17] See Procl. *In Ti.* III 27, 13-18.

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Sergey Trostyanskiy

SIMPLICIUS ON ARISTOTLE'S PARADOX OF THE NOW

Abstract

This article analyzes Simplicius's interpretation of Aristotle's theory of the now, a central issue for understanding Aristotle's philosophy of time. It first examines Simplicius's interpretation of Aristotle's account in *Physics* IV and then his reassessment of the same problem in *Physics* VI. It argues that Simplicius's interpretation is deeply informed by Neopythagorean thought, especially in his account of the sameness of the now, while at the same time showing that he remains, by and large, faithful to Aristotle by resisting the introduction of vertical differentiations or phases of the now. The article further shows that Simplicius's interpretation exemplifies the distinctive philosophical profile of the ancient commentary tradition, in which exegesis and philosophical synthesis are inseparable. Finally, it identifies Simplicius's assessment of Aristotle as a major source for influential modern interpretations of Aristotle's theory of time, including both those that develop his reading and those that react against it from a more orthodox Peripatetic perspective.

Keywords

Simplicius, Aristotle, Pseudo-Archytas, Physics, the Now

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Introduction

Simplicius is without doubt one of the greatest and most significant commentators on Aristotle's *Physics*.[1] His huge impact on modern scholarship can hardly be overestimated. There are several targeted studies of Simplicius's commentaries on Aristotle's *Physics* in general and on Aristotle's theory of time in particular.[2] The primary focus of investigations among modern scholars, and not unexpectedly, is Simplicius's *Corollaries on Place and Time*, as it contains an enormous amount of doxographic material along with Simplicius's own conjectures about the subject matter. On the other hand, there are a handful of studies on Simplicius's commentary on Aristotle's *Physics* IV and VI.[3] This article aims to fill in this gap by subjecting to scrutiny Simplicius's attempt to shed light on Aristotle's theory of the now, which is of primary significance for understanding Aristotle's philosophy of time. I firstly consider Simplicius's assessment and interpretation of Aristotle's theory of the now in *Physics* IV. This discussion paves the way for a thorough analysis of Simplicius's reassessment of this issue in *Physics* VI.

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[1] Simplicius is the principal ancient commentator, gathering together in his immense *oeuvre* the entire Greek exegetical tradition, including the commentary of Alexander of Aphrodisias, which he cites hundreds of times. It is therefore the basis for understanding physics in the Greek world and in the humanistic age. According to Hermann Diels, Simplicius at his best, and especially in his initial summaries, takes inspiration from Alexander. Diels also draws from this an explanation for the loss of Alexander's commentary: late antiquity could not bear the burden of transcribing two works of such weight. From this we can infer that, for Diels, the difference between the two works is not of value; in fact, from his point of view, what is valuable in these commentaries is the doxographical part, from which he takes material for his collections, *Doxographi Graeci* and *Die Fragmente der Vorsokratiker*. The advantage of preserving Simplicius's commentary rather than Alexander's is chronological: the tradition has preserved the more recent, and in some ways more up-to-date, of the two works. But what this updating consists of deserves consideration. Evidently, the relevance of Aristotelian theories to mathematics raises the issue of their interaction with the research of the Pythagorean school, and this school itself seems to have an important weight in the exegesis of the parts of the *Physics* examined in this essay.

[2] Sonderegger (1982); Golitsis (2008); Menn (2022); Golitsis and Hoffmann (2023).

[3] See, e.g., Stevens (2021); Golitsis and Hoffmann (2023). In addition: Seissl (2024); Sorabji (1992) and Sorabji (1989). This list is by no means exhaustive.

My intention in this article is to establish that Simplicius's interpretation of Aristotle's theory of the now is driven by Neopythagorean thought and that his interpretative twist regarding the sameness of the now clearly draws on the Neopythagorean philosophical background to support this interpretation. A clearly accentuated connection between Simplicius and Neopythagorean thought is often acknowledged in scholarly literature; and in this article, I endeavor to provide further evidence for such a connection. Yet I also show that Simplicius by and large remains faithful to Aristotle by avoiding the possibility of imposing the idea of the now's vertical differentiations and phases. Additionally, I suggest that Simplicius's reassessment of Aristotle's theory should be seen not merely as a commentary, but also as a new and unique synthesis that leans towards Neopythagoreanism, which can be regarded as a theory in its own right.

Furthermore, I aim to show that various modern commentaries on Aristotle's theory of time are either inspired by or derive directly from Simplicius's assessment of Aristotle. This concerns not only those modern accounts which draw on Simplicius's interpretation but also those that go against it, taking the path of a more orthodox Peripatetic approach to Aristotle's theory; for these, too, have their main source of inspiration in Simplicius's doxographic account and analysis of the points of view which compete with his own.

1. Aristotle's Now: Problems and Solutions

Aristotle in *Physics* IV 10 introduced the paradox or dilemma of the now. This dilemma revolved around the issues of sameness and otherness. Is the now always the same or ever different?[4] The dilemma was framed as a series of pre-scientific arguments that sought to furnish apparent proofs of the thesis that both horns of the dilemma contain unviable ramifications and must

[4] Aristotle admits that it is hard to say whether the now remains one and the same or whether it is always other and other (ἔτι δὲ τὸ νῦν, ὃ φαίνεται διορίζειν τὸ παρελθὸν καὶ τὸ μέλλον, πότερον ἓν καὶ ταὐτὸν ἀεὶ διαμένει ἢ ἄλλο καὶ ἄλλο, οὐ ῥᾴδιον ἰδεῖν). Arist. *Ph*. IV 10.218a8-10.

be rejected because they jeopardize the now's knowability and existence.[5] If the now exists and is knowable, it must be either always the same or ever different. Yet the now can neither be always the same nor ever other and other. So, if A, then either B or C. But neither B nor C. Therefore, not A.

Aristotle regarded paradoxes as stumbling blocks that need to be addressed to clear the path to knowledge. His solution was that the now is both always the same and ever different but not in the same sense. So, if A, then B and C; but A; therefore, B and C. The now, he argued, is the same insofar as ὃ ποτε ὄν is concerned;[6] yet it is always other and other in being and *logos*.[7] It should be noted in this context that Aristotle's approach to the paradox clearly indicated that he thought it needed a special treatment. This included the possibility of bypassing standard analytic tools (set out in other treatises

[5] According to Aristotle, the first horn of the dilemma states that if the now is always different, then the now which formerly was must have ceased to be (τὸ δὲ νῦν μὴ ὂν πρότερον δὲ ὂν ἀνάγκη ἐφθάρθαι ποτέ). *Ibid*. 218a11-16. This horn contains another dilemma, whose horns also contain impossible ramifications since the prior now can neither have ceased in itself (since it then existed [οἷόν τε διὰ τὸ εἶναι τότε]), nor in another now since one now cannot be contiguous to another (ἔστω γὰρ ἀδύνατον ἐχόμενα εἶναι ἀλλήλων τὰ νῦν). Yet if it did not cease to be in the next now (ἐν τῷ ἐφεξῆς), but in another, it would then be together (ἅμα) with the infinite nows (νῦν ἀπείροις) between the two (ἐν τοῖς μεταξὺ), which is impossible. *Ibid*. 218a16-21. These are the objections against the assumption that the now is always different. Aristotle then subjects to scrutiny the contrary assumption that the now is always the same since no limited divisible thing has a single limit (οὐδενὸς γὰρ διαιρετοῦ πεπερασμένου ἓν πέρας ἔστιν) and since the now is a limit (τὸ δὲ νῦν πέρας ἐστίν) and time delimited (πεπερασμένον). *Ibid*. 218a22-25. This objection concerns time itself. Then he adds a further qualification to his thesis and says that the imposition of a single now would necessarily lead us to an impossible conclusion also in respect to things in time. Thus, what is before and what is after would be in this same now and things which happened years ago would be together with what has happened today. Consequently, nothing would be before or after anything else (καὶ οὔτε πρότερον οὔτε ὕστερον οὐδὲν ἄλλο ἄλλου). *Ibid*. 218a25-30. Hence, it appears that the now can neither be ever other and other, nor always the same.

[6] For recent studies of Aristotle's ὃ ποτε ὄν, see Lederman (2014), Coope (2005), and Brague (1982).

[7] We should immediately note that λόγος is a homonymous appellation which in this context (and in its most generic sense) means account or description but can also signify a statement of being, among many other things. The now is thus always different (ἕτερον) insofar as its being (τὸ δ' εἶναι ἕτερον), or its being in succession or "in one and then in another" (ᾗ μὲν γὰρ ἐν ἄλλῳ καὶ ἄλλῳ, ἕτερον) and its account/description (τῷ λόγῳ δὲ ἄλλο) are concerned, and also *qua* being a limit (πέρας). Moreover, the now seems to be always different *qua* being an end and a beginning of time. Arist. *Ph.* 222b1.

to solve the issues of sameness/difference) in order to handle the issue at stake; allowing the use of taxonomies whose meaning is not clearly articulated; the choice of proceeding analogically in giving scrutiny to the now; the possibility of perhaps overriding the rules of scientific argumentation established in his *Analytics* (including that of genera crossing), etc.

Aristotle's solution, along with his theory of the now in Book IV, as subtle as they are, were not immediately clear, nor were they fully persuasive. There were many reasons for potential confusion. For instance, Aristotle's approach to the issue through analogical reasoning and the choice of taxonomies to solve the paradox/es seemed to open different and diverging interpretative paths, and that it was not immediately obvious which path should one take to make sense of Aristotle's theory of the now. On the other hand, in Book VI Aristotle revisited the topic of the now while setting out his theory of indivisibles and continuum. In this book Aristotle no longer relied on analogical reasoning but proceeded syllogistically by offering a series of theorems, furnishing them with direct proofs and supplementing these by indirect *reductio* proofs. Yet it remained somewhat unclear whether the two accounts (i.e., in Books IV and VI) were fully compatible and how they could be synthesized into a cohesive whole.

Simplicius's interpretative endeavor aimed to clarify Aristotle's statements in order to make his theory comprehensible to his contemporaries. Simplicius's initial and arguably less successful attempt to make sense of Aristotle's theory as it was stated in Book IV should be here reviewed along with his more intricate analysis in the commentary to Book VI. My survey of Simplicius's commentaries, as sketchy and preliminary as it is, will not only allow us to see his reassessment of Aristotle's theory as a synthesis that leans towards Neopythagoreanism but will also highlight the significance of Simplicius's interpretative endeavor for contemporary scholarship and the enormous impact it has had on our understanding of Aristotle.

2. Reassessing Aristotle's Terminology in Book IV

It appears that Simplicius was quite perplexed by Aristotle's terminology in *Physics* IV. In particular, where the now was concerned, the key phrase, ὃ ποτε ὄν, did not seem immediately intelligible to him. So, right from the beginning he decided to omit it. His approach was two-fold. On the one hand, Simplicius adapted Aristotle's now to Neopythagorean thought by reconceptualizing ὃ ποτε ὄν as substrate: the now can underlay change and receive different forms, e.g., being prior and then posterior, one and then another. Seen in this way, the now participated in incomplete actuality, switching the modality of being and obtaining temporal properties.[8] I will soon clarify in what sense the now may be understood as having temporal properties. On the other hand, Simplicius interpreted the phrase in light of Pseudo-Archytas, reframing it by finding its equivalent in Aristotle's standardized taxonomy (i.e., sameness/otherness in genus, species, number, etc.) and unlocking its meaning through Neopythagorean theory.[9]

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[8] Sambursky and Salomon (1971) n. 2, p. 105: "for the Now as a subject is an identity, but it accepts different attributes."

[9] The identity of this Neopythagorean writer remains mysterious. Various manuscripts and extant fragments preserved by late antique doxographers sought to demonstrate that the author was a contemporary of Plato and that he had an enormous impact on Aristotle's thought. Late antique thinkers by and large endorsed his treatises as authentic works of the historic Archytas. There were also, however, some doubts about their authenticity. For instance, Themistius pointed out that the treatises were pyrographic. There seems to exist a unanimous agreement among modern scholars that the treatises belong to the Doric Pythagorean pseudepigrapha. It is likely that they were written in the first century BC. The issue of Pseudo-Archytas's identity has some further complications, as it is not altogether clear whether what has been handed down to us as Archytan pseudepigrapha has a single author. In the present article, the designation Pseudo-Archytas is used to refer to the authorial figure underlying the pseudepigrapha as transmitted by the late antique tradition, without distinguishing between the Doric fragments preserved especially by Simplicius and the recension transmitted in the Ambrosian manuscript of *On the Whole System*. This usage follows the prevailing editorial and interpretative practice inaugurated by Thesleff and Szlezák and implicitly adopted in recent studies by Ulacco, who consistently treats the Simplician fragments and the Ambrosian text as parts of the same philosophical corpus and discusses them as works of a single pseudonymous author, without raising the question of separate authors. Whether the various Archytan treatises ultimately derive from one historical writer or from several closely related authors working within the same intellectual milieu remains an open question, which is not decisive for the present argument. What matters

In his commentary on *Physics* IV, Simplicius first speaks of ὃ ποτε ὄν in relation to time. The issue at stake in this context is that time is something other than change. It is change, according to Aristotle, only *qua* ὃ ποτε ὄν, whereas its being is different from change and is not change. Simplicius asserts that the meaning of ὃ ποτε ὄν is that of existence and substrate.[10] Here the terms ὕπαρξις and ὑποκείμενον appear to mean the same thing as ὃ ποτε ὄν. On the other hand, time's being or account (here, strangely, but in accord with Aristotle's statements, they are used interchangeably to feature the now's otherness) are not change.[11]

Time then, as far as its being and account are concerned, is the before and after in change when they are divided or distinguished.[12] He then asserts that it would not be wrong to define time as the number of the before and after with respect to the flux of change.[13] Here, a typical Neopythagorean term appears: the flow or flux of existence, which stands for change or motion at its lower phase.[14] What comes next is Simplicius's assertion that Aristotle's statement about the before and after with regard to change or motion also applies to the now. "For, as he [i.e., Aristotle] said of the before and after that 'ὃ ποτε ὄν is a change, but its being is other and not change', so he has also said of the now that in substrate (τῷ μὲν ὑποκειμένῳ) it is one and the same but differs in account, in so far as one is before, the other after."[15] Simplicius gives further scrutiny to the issue at stake by analyzing another expression: ὅ ποτ' ἦν and its application to the now. He maintains that "the

here is the coherence of the textual and philosophical tradition transmitted under the name of Archytas. See Thesleff (1965); Szlezák (1972); Ulacco (2016), (2017), (2020); Horky (2021). In this article I use Thesleff's critical edition.

[10] καὶ τοῦτό ἐστιν ὃ λέγει, ὃ μέν ποτε ὂν κίνησις, τουτέστιν ἡ ὕπαρξις αὐτὴ καὶ τὸ ὑποκείμενον. Simpl. *In Phys.* 9.712.24-26.

[11] τὸ μέντοι εἶναι αὐτῷ, τουτέστιν ὁ λόγος, ἕτερον καὶ οὐ κίνησις. *Ibid.* 9.712.26-27.

[12] ταὐτὸν ἄρα ὁ χρόνος ἐστὶ καὶ τὸ πρότερον καὶ ὕστερον ἐν κινήσει, ὅταν διορίζηται ταῦτα. *Ibid.* 9.713.7-8.

[13] ὥστ' εἴ τις τὸν χρόνον ὁρίζοιτο ἀριθμὸν τοῦ προτέρου καὶ ὑστέρου τοῦ κατὰ τὸ εἶναι τὸ ῥέον τῆς κινήσεως [...] οὐκ ἂν οἶμαι διαμαρτάνοι. *Ibid.* 9.716.15-18.

[14] Cf. ἀριθμός ἐστι πλῆθος ὡρισμένον ἢ μονάδων σύστημα ἢ ποσότητος χύμα ἐκ μονάδων συγκείμενον. Nicom. *Intr. Arith.* 1.7.1.1-2.

[15] ὡς γὰρ ἐπὶ τοῦ προτέρου καὶ ὑστέρου ἔλεγεν, ὅτι ὃ μέν ποτε ὂν κίνησίς ἐστι, τὸ δὲ εἶναι αὐτῷ ἄλλο καὶ οὐ κίνησις, οὕτω καὶ περὶ τοῦ νῦν εἶπεν, ὅτι τῷ μὲν ὑποκειμένῳ ἕν τι καὶ ταὐτόν ἐστι, τῷ δὲ λόγῳ διάφορον, καθόσον τὸ μὲν πρότερόν ἐστι τὸ δὲ ὕστερον. Simpl. *In Phys.* 9.721.31-35.

now is the same in respect to the substrate, for that is what ὅ ποτε ἦν means" (τὸ νῦν τὸ αὐτὸ εἶναι τῷ ὑποκειμένῳ, τοῦτο γὰρ σημαίνει τὸ ὅ ποτε ἦν).[18] In the adjacent sentence Simplicius seems also to imply that ὃ ποτε ὄν and ὅ ποτε ἦν mean the same thing. In addition, he omits ὕπαρξις and opts for ὑποκείμενον as the term co-extensional with ὃ ποτε ὄν.

Simplicius's clarification of Aristotle's philosophical jargon may at first glance appear random; but this is not the case. In the first place, it appears to derive from *De partibus animalium*, in which Aristotle places both terms side by side: "the substratum of blood, that which it is while it is blood is not hot."[21] Indeed, this is the sole instance in Aristotle's works where the terms are placed side by side; and, for this reason, it may not suffice. Yet some of Aristotle's phrasing suggests that ὅ ποτε ὄν may also refer to that which underlies something else. Therefore, Simplicius's view is neither random nor arbitrary.[22]

Simplicius was neither the first nor the last to introduce this interpretative thread. He indicates that Aristotle's disciple Eudemus also used the term substrate to make sense of Aristotle's ὃ ποτε ὄν.[23] Philoponus took the same path and also interpreted it the same way.[24] Yet it seems that Simplicius was the first to approach Aristotle's ὃ ποτε ὄν in a systematic and coherent way. At least, I have not found an earlier account of the issue in which there is an attempt to justify this interpretation and to explain the rationale behind it.

More importantly, Simplicius's approach to this issue is an attempt to place Aristotle's theory into a different framework, since his linguistic twists are apparently loaded with specific ontological and epistemic commitments.

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[18] *Ibid.* 9.721.30-31.

[21] τὸ δ' ὑποκείμενον καὶ ὅ ποτε ὂν αἷμά ἐστιν, οὐ θερμόν. Arist. *Part. an.* 649b23-24. See Rashed (2005) pp. xcii-xcvii.

[22] See Giampaolo (2012) pp. 71-92.

[23] Καὶ ὁ Εὔδημος δὲ τὰ αὐτὰ περὶ τοῦ νῦν ἐν τῷ τρίτῳ τῶν Φυσικῶν φησι γράφων οὕτως· "εἰ δὲ νοήσαιμεν φερομένην στιγμήν, τῷ δὲ ἐν ἄλλῳ <καὶ ἄλλῳ> τῆς γραμμῆς γίνεσθαι καὶ αὐτὴν ἄλλο καὶ ἄλλο γινομένην, οὕτω δὲ οἰηθείημεν καὶ περὶ τὸ νῦν ἔχειν, τὸ μὲν ὑποκείμενον, ὁτιδήποτε δεῖ νοῆσαι αὐτό, διαμενεῖ τὸ αὐτό, ἐν ἄλλῳ δὲ καὶ ἄλλῳ γινόμενον ἕτερον καὶ ἕτερον ἔσται." Simpl. *In Phys.* 9.723.36-724.4.

[24] Philoponus argued that by this phrase Aristotle meant to say that the now is identical in substratum: ὃ δὲ ποτε ὂν ἐστι, φησί, τὸ αὐτό, τουτέστι κατὰ τὸ ὑποκείμενον. *In Phys.* 17.226.27-8.

At any rate, his approach is not free of a particular agenda, whether reconciling Aristotle with Plato or with "Pythagoras", or something else along similar lines. It is thus clear that Simplicius's identification of ὃ ποτε ὂν and substrate is not random and that he has a particular agenda, which is undeniable and easily tracible.

A few comments are needed in this context. Firstly, Simplicius's rendering of ὃ ποτε ὂν and ὅ ποτ' ἦν has entered modern scholarship.[25] In some modern editions of Aristotle's *Physics* (and indeed very authoritative ones, such as Barnes, Hardie, and Gaye), the phrase is translated in all its applications as substratum or substrate. Secondly, some scholars (e.g., Coope, Reeve, and Sachs, among others) seem to recognize that substrate may not be the exact equivalent of ὃ ποτε ὂν. More significantly, this rendering appears to imply a theory that may be alien to Aristotle's own ontological commitment in relation to the now. Yet, strange as it might seem, most scholars have translated Aristotle's ὃ ποτε ὂν and ὅ ποτ' ἦν as substrate. Cornford went even further by translating it, at times, as substance and, at other times, as object, thus strengthening the Pythagorean aspect of Aristotle's discourse.[27]

What, then, is substrate in Aristotle? As we learn from the *Physics*, a substrate is what underlies change and enables the subject of change to maintain its identity and survive change.[28] It is also something receptive of opposites, i.e., various antithetical forms or properties that it can accommodate without being destroyed, e.g., the properties of before and after, of first and last, etc. A substrate thus appears to be one of Aristotle's fundamental physical terms. Once the now is apprehended as having its own substrate, it immediately, though implicitly, obtains subjectivity and receptivity to opposites. This shift is a gateway to Neopythagorean thought, as it paves the way to an interpretation of the now as creating time by flowing.

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[25] As Brague (1982) p. 98 rightly pointed out, "l'interprétation philosophique de la formule fait l'unanimité, en tout cas au niveau élémentaire où il s'agit d'identifier son contenu: tous supposent qu'il s'agit du substrat, ou du sujet, en un mot de l'*hypokeimenon*".

[27] See Wicksteed and Cornford (1934).

[28] ὅτι δεῖ τι ἀεὶ ὑποκεῖσθαι τὸ γιγνόμενον, καὶ τοῦτο εἰ καὶ ἀριθμῷ ἐστιν ἕν, ἀλλ' εἴδει γε οὐχ ἕν· τὸ γὰρ εἴδει λέγω καὶ λόγῳ ταὐτόν. Arist. *Ph*. 190a14-17.

3. Reverting to Aristotle's Standardized Taxonomy

Simplicius does not, however, seem to be totally content with this linguistic and interpretative shift. According to him, a juxtaposition of what is one and the same in substrate with what is other and other in being or logos should have a proper equivalent in Aristotle's thought. Yet he does not go back to Aristotle's original phrasing but instead retains and even further articulates his thesis that ὃ ποτε ὂν means precisely substrate. This raises the question of what the sameness in substrate is equivalent to in Aristotle's standardized taxonomy. The sameness in substrate should be equivalent to sameness in number or in species, or by analogy, etc. Otherness should also be identified as applying to number or species, etc.

Once again, to be the same or other in number is to have the same or different matter; and to be the same or other in form means to have the same or a different form of being. Aristotle also mentions analogy and states that to be one and the same by analogy is to be related as one thing is to another.[29] He says that "things that are one [and the same] by analogy are not all one in genus."[30] The term genus here does not mean that which can be differentiated into species but rather a subject genus.[31]

This second move was not uncommon among Aristotle's critics and interpreters. A similar attempt was made earlier by Pseudo-Archytas.[32] Simplicius thus looks to Pseudo-Archytas and aims to reconsider a less cryptic terminology (once he settles on translating ὃ ποτε ὂν as substrate), in order to frame substrate within Aristotle's standardized taxonomy. As we learned from Aristotle, substrate is one in number and different (i.e., not one) in form (εἴδει γε οὐχ ἕν). The inference from substrate to numerical unity seems to be immediate. Consequently, at first, he argues that "the nows differ from each other in no way save that one is before, the other after."[33] This statement seems to be an inference from the thesis of the unity of the now's substrate. It is one and the same, i.e., one in number; yet it receives different

[29] Arist. *Metaph*. 1016b34-35.
[30] *Ibid*. 1017a2-3.
[31] Wilson (2000) p. 10.
[32] Ps.-Archyt. *Frs.* 29.13-5.
[33] Simpl. *In Phys.* 9.725.10-11.

"forms" or, according to Aristotle's jargon from Book IV, its logos/account/description varies (at this point, the variable has not yet been identified). This, according to Simplicius, means that nows are different "in neither genus nor species, so also not in number."[34] Therefore, according to Simplicius, being arranged in a sequential order does not amount to having a different matter or form, etc. Hence, the now is the same in number and species.

It is worth noting in this context the homonymy of εἶδος, as it can mean both species, form, shape, etc. It is thus possible, according to Aristotle, for one and the same thing to be the same in genus, species and number in relation to itself when considered as more than one. Conversely, it is impossible for it to be one in number and many in species or genus, as this would render it self-contradictory. What is possible, instead, is for one and the same thing to have different descriptions or accounts. In this context, Simplicius's statement makes perfect sense.

The overall argument, nevertheless, is odd; for Simplicius posits that the reason for sameness lies in the analogical identity of the now and the unit of number. The now is therefore the same in number and species because a unit of number does not exhibit any numerical or specific difference in relation to another unit.[35] Again, at first glance, number and applied (or instantiated) number (i.e., time as the number of motion), together with their principles (i.e., the unit and the now), appear to represent two different and somewhat separate subject genera. The middle term, however, is supplied by the science of number and thus makes the argument susceptible to genera crossing. At least, the argument requires further clarification as to how the middle term supplied by the science of number can explain anything in the science of applied number, even if the two subject genera are bound up by the introduction of a new overarching subject genus which subsumes these proper genera hierarchically arranged and structured in the framework of superordinate and subordinate sciences.[36] Either he does not recognize the

[34] *Ibid*. 9.725.11-12.
[35] ὥσπερ οὐδὲ μονὰς μονάδος. *Ibid*. 9.725.12.
[36] See Wilson (2000) p. 10.

difference between the subject genera in this context (thus adopting the Neopythagorean approach to the subject matter)[37] or thinks that it is appropriate to cross the genera.

Although Simplicius's argument is odd, if we look at it from a different angle, it is quite intriguing. He maintains that the now does not differ from another now. Why is that? Because, he argues, "things that differ numerically, as has been said before, differ by certain accidents, just as Plato differs from Socrates."[38] Again, numerically different things are those whose matter differs. Plato and Socrates are differentiated in this way. In other words, they have different underlying substrates. Yet the units of number are not differentiated in the same way. The implicit conclusion of this enthymeme is that nows have no characteristics that make them different in number. They are the same in number. So, nows are the same now before and after. This makes sense. The now is perhaps, first and foremost, the same and obtains otherness *qua* something else, e.g., moving things.[39]

Yet Simplicius's proof can still raise eyebrows. If existing before and then after does not contribute anything to the material differentiation of nows, how then are they different? Is such a difference merely apparent? I think what Simplicius has in mind is the Stoic principle of indiscernibles.[40] He may have thought that a relative order of nows (or, perhaps, a quasi-order as nows are not next to each other and their precise "location" in a temporal series remains unspecified due to their density, as we learn from Aristotle)[41] is not a proper distinguishing quality able to make nows "peculiarly qualified."[42] Similarly, the unit of number is neither a cardinal nor an ordinal

[37] Ps.-Archyt. *Frs*. 6.12-15.

[38] τὰ γὰρ ἀριθμῷ διαφέροντα, ὡς καὶ πρότερον εἴρηται, συμβεβηκόσι διαφέρουσί τισιν, ὡς Πλάτων Σωκράτους. *Ibid*. 9.725.12-14.

[39] For instance, according to Iamblichus, the now *qua* indivisible (i.e., partless instant) always exists and does not come to be (καὶ ὅτι τὸ νῦν ἔστι καὶ οὐ γίνεται). Simpl. *In Phys*. 9.792.28-29. Yet, he argues, "the now which is participated in nature and is not separate from the things which are in a state of becoming is different from the now which is separate and subsists in itself, the latter being at rest with regard to its form while the former is seen to be in continuous motion." Simpl. *In Cat*. 8.355.11-14.

[40] Plut. *Comm*. *not*. 1077C4-E2.

[41] Arist. *Ph*. 218a16-21.

[42] Stob. 1.177, 21-179, 17 (including Posidonius fr. 96), in Long and Sedley (1987) pp. 167-8.

number but a mere principle of number from which number derives or its building block. For this reason, it does not have any characteristics apart from the fact that units cannot be together but must be apart, i.e., one after another. Otherwise, they are indiscernible.

A general conclusion then follows: "perhaps they [i.e., nows] are said to be identical in substrate because they are in no way different".[43] Here again, Stoic thought seems to be instrumental in Simplicius's argument, as he takes into account the Stoic distinction between the meanings of substrate, using the term in its second meaning, i.e., of what is commonly or peculiarly qualified.[44] Again, Simplicius seems to make sameness prior to difference in respect to nows. His conclusion that the now *qua* ὃ ποτε ὂν or substrate is always the same is proved by the absence of a differentiating principle (e.g., in number or species, etc.) that can make nows other and other. At least, he does not seem to regard the prior and the posterior as capable of assuring numerical or specific difference. We may therefore assume that nows are the same in number by virtue of their "matter" being identical.

Yet in what comes next Simplicius proposes that "it is better to say that 'identity in substrate' means the same as 'identity in species'."[45] His justification is that "to be the same in species in such a way as to admit no difference and to be numerically identical seem the same in a way, as was said earlier in the case of units".[46] Thus, nows are the same in number and in species. Therefore, they have the same matter and the same form. They differ only in that they are sequentially ordered as before and after. This part of Simplicius's interpretational move thus applies Aristotle's standardized taxonomy only to the issue of sameness *qua* ὃ ποτε ὂν or substrate. It is the same in both number and species. It is different in respect to before

[43] Simpl. *In Phys.* 9.725.14-15.
[44] Thus, as Porphyry reports: "(1) Substrate is twofold, not only according to the Stoics but also according to the earlier philosophers. (2) For unqualified matter, which Aristotle virtually names, is the primary meaning of substrate. (3) The secondary meaning is that which is commonly or peculiarly qualified. For the bronze, and Socrates, are substrate co whatever comes about in them or is predicated of them." Simpl. *In Cat*. 8.48.11-16.
[45] Simpl. *In Phys.* 9.725.18-19.
[46] *Ibid*. 9.725.20-22.

and after; but this difference does not have any equivalent in the terms of Aristotle's taxonomy.

Simplicius, however, does not seem to be entirely happy with this solution. He keeps wondering why Aristotle did not say "that the now was the same in form but that it was the same in substrate, nor say now that a time was the same in form, as he said of change, but by recurrence (τῷ πάλιν καὶ πάλιν)? Yet he especially insists on the threefold exhibition of the same thing by genus, form and number."[47] Here we encounter a new term: recurrence. Simplicius's suggestion is that "perhaps it was because even things said to be the same in form still contain many inessential differences, if they differ numerically as do Plato and Socrates. But changes, at any rate, which occur over and over again the same, and the nows and the times, are almost numerically identical."[48] He seems to be unsure here about the status of the numerical identity of nows. In any case, it is worth noting his hesitation in acknowledging the full numerical identity of the now.

Indeed, his measured approach shows some uncertainty regarding whether nows are numerically the same. He finds support for the thesis that "things became in a way even numerically identical by recurrence" in "Pythagorean" thought.[49] Yet he ultimately seems to concede that Eudemus reduced this thesis to absurdity by arguing that if we assume that numerically the same things recur, everything will be the same, as also will time. Hence, he finally settles on the view that the now is the same in form and perhaps almost identical in number but with some qualification, pointing out that numerically identical things do not recur and that what does recur must be differentiated, at least in respect to order. If we take into account the notion of "qualified sameness" in the sense of "sameness in appearance" alone (and difference in reality), then Simplicius's theory sounds either very similar to, or even the same as, that of Pseudo-Archytas.[50]

[47] *Ibid*. 9.732.14-18.
[48] *Ibid*. 9.732.18-22.
[49] *Ibid*. 9.732.23-24.
[50] Ps.-Archyt. *Frs.* 29.13-15.

The now thus conceptualized by Simplicius, if converted into Aristotle's standardized taxonomy of sameness, appears to be the same (with qualifications) in number (*qua* ὅ ποτε ὄν or substrate) and species and other and other in account (*qua* being first and then next). Indeed, it seems impossible to conceptualize the now as different in species or form, unless we assume that the before and after are species or forms of their own kind. On the other hand, to conceptualize the now as numerically different would entail conceding fully to Pseudo-Archytas, Iamblichus, *et. al*, i.e., reading Aristotle through a very particular Neopythagorean theory, a move that Simplicius is not ready to make. This theory proceeds via the introduction of the notion of the now's phases, maintaining that numerically differentiation (associated with ontological instability) and formal sameness (marking the being of ontologically stable entities) are not predicated of the same now or not of the same phase of the now.[51] Yet Simplicius in this context aims to remain faithful to Aristotle, whose now is not phased.

Moreover, the imposition of numerical otherness seems to contradict the previously established thesis of the now's sameness *qua* substrate, i.e., to make the substrate subject to corruption, to deny unity and sameness to it. Another impediment here is associated with the fact that being before and after, if we are to conceptualize it as representing an ordered series, implies being first and then next. Yet, as Aristotle argues in *Physics* VI, nows are not arranged so that one now is next to another now. Even if they are ordered in some way, their order may appear arbitrary or random. As a result, being before and after cannot really account for the now's numerical difference. Hence, Simplicius's conclusion that the now is the same in species and almost identical in number leaves the issue at stake not fully resolved.

[51] Thus, Iamblichus asserts, "if one says that the now becomes and disappears, one has to understand this not with regard to the now [i.e., partless instant] itself but with regard to the things which participate in it or do not participate in it. For to hold together and to make continuous is a property of the indivisible only, whereas to become one thing after another and to perish and always to flow is most characteristic of the participation of the now in becoming." Simpl. *In Cat*. 8.355.4-8.

4. Assessing Aristotle's Analogical Reasoning

Running parallel to Simplicius's exploration of Aristotle's terminology is his effort to discern the meaning of Aristotle's analogies. He starts with the analysis of the analogy of what is carried and its motion.

> having shown how that which moves is identical with the substrate, though different in account, he says that the case is the same with the now, since time follows on change and has the same features, as was said earlier, and similarly with the now and what changes. The likeness and identity of the cases is shown by the relation of the now to that which moves, and we recognise the before and after in change in no other way.[52]

Simplicius, in this context states that: "he [i.e., Aristotle] takes it as obvious that what is changing is identical in substrate."[53] This statement is then universalized as holding true not only of what is carried but also of the point and of the now. The relation between such terms as the now and motion thus appear to be not merely analogous *qua* a common property, i.e., identity of substrate; but also as belonging *per se* and *qua* themselves to time as their subject genus. Hence, motion/flow belongs to the now, thus making it subject to change.

Simplicius then reminds us of Aristotle's explanation of following or accompanying, in which "change was said to accompany magnitude and time to accompany change".[54] The meaning of this statement in Aristotle seems to be that what is ontologically posterior accompanies what is ontologically prior, e.g., as time accompanies change, etc. This is perhaps the reason why time is the number of change, the latter being ontologically prior and the former posterior. Yet Simplicius immediately links the notion of accompanying/following to that of being equal in quantity. Then, he continues, "since these things accompany each other, the things that originate them will accompany them also."[55] This assertion immediately subverts the notion of ontological priority/posteriority by presenting a principle as accompanying its product (that which stems from it) and not as being accompanied by it. I take

[52] Simpl. *In Phys.* 9.723.21-26. In this article I use Urmson's (1992) translation.
[53] ὅτι δὲ τὸ αὐτὸ τῷ ὑποκειμένῳ ἐστὶ τὸ κινούμενον ὡς ἐναργὲς λαμβάνει. *Ibid*. 9.723.4-5.
[54] *Ibid*. 9.722.23-24.
[55] *Ibid*. 9.722.26-27.

Simplicius's statement not as applying the meaning of ontological priority/posteriority to the subject matter but rather as reinterpreting it along the lines of mutual dependence or something of this kind. Only under this interpretation does the statement remains coherent.

The same relation of following binds together time and its principle, the latter appearing to accompany time. Time may therefore be accompanied by the now while being its unfolding or something else similar. This way of thinking is authentically Neopythagorean.[56] Consequently, by introducing the relation of following to what is carried and its motion, on the one hand, and the now and time, on the other, Simplicius aims to implicate Neopythagorean thought in Aristotle's discourse. He thus states that:

> the point originates the magnitude, taking a line to be the flow of a point, and a line is the first magnitude, and the moving thing originates the motion, and the now originates time. As, then, the same point, by flowing, creates the magnitude, but is not set alongside another point, and as the identical moving object creates the motion, so the now, that is the same *qua* substrate, being numbered as before and after, defines and creates time.[57]

This reading is grounded in an ontology of mathematicals and indivisibles that is arguably alien to Aristotle.[58] The flow of a point originates magnitude. The point in this scenario is a "this", a substantive point, we might say, one that is subject to flow. Flow stands for the ontological instability associated with a particular modality of being, i.e., incomplete actuality. This modality, as I understand it, represents the lower phase of motion (which is a moving motion, as contrasted to that of the motionless motion of the intelligible or intellectual).[59] We may therefore conclude that flow is a kind of motion and that the point is subject to motion. It is receptive to opposites, e.g., before and after, first and next, etc. It is indivisible and yet moving continuously, leaving no gap in the geo-

[56] See Hoffmann (1980) pp. 313-4.
[57] Simpl. *In Phys.* 9.722.27-34.
[58] There are, however, some scholarly accounts that ascribe this "Pythagorean" thread to Aristotle. See Robbins in D'Ooge (1926) p. 117.
[59] See Gersh (1973).

metrical continuum. This continuum, initiated by indivisibles that become ontologically unstable, was conceptualized by Nicomachus, Pseudo-Archytas, etc.[60]

Yet Simplicius is well aware that this Neopythagorean interpretative thread goes against Aristotle's theory of indivisibles. A point in Aristotle is not a substantive point. The same applies to the now. They are mere limits of the line and of time. Consequently, he notes that the case of a moving object is somewhat different since what initiates the flow of becoming is not a move, i.e., an indivisible limit of motion (i.e., something similar to the point and the now), but a moving object, which is a "this".

What is especially interesting is that the flow of the now is linked here to numbering. This interpretative twist seems to lie halfway between the Aristotelian and Neopythagorean theories, in that it implicates subjectivity in the now *qua* substrate; yet it also implicates Aristotle's ontology of number, which is not an actual and separate being, since it needs to be actualized by the mind capable of counting. Hence, time is actualized when the now/s is/are counted.

In this context, Simplicius exhibits a certain reluctance to give a full explanation of Aristotle's theory that entails applying the Neopythagorean interpretative thread to the ontology of number, according to which number (along with numerical relations, etc.) is a separate and actual being of its own kind. Additionally, this (i.e., Neopythagorean) interpretative thread is based on the assumption that a single subject genus subsumes motion, number, and time (i.e., that there are *per se* connections between these), along with their principles, which originate them.[61] In this context, Simplicius does not,

[60] Nicom. *Intr. Arith*. 1.7.1.1-2.

[61] Some Neopythagoreans would have employed the theory of a self-moving number in order to prove that such an account is by no means subject to the fallacy of genera crossing since it makes number (and the number of motion) subject to motion and introduces a common subject genus to the field of quantitative studies. It contains two coordinate groups: continuous and discrete quantities; these are differentiated by two differentiae, i.e., rest and motion. These differentiae give us four sciences that are either bound by the single subject genus or represent coordinate and subordinate genera. Therefore, the science of continuous quantity at rest is geometry, whereas the science of continuous quantity in motion is astronomy. The science of discrete quantity at rest is arithmetic, whereas the science of

however, predicate motion but rather mere countability to the now. Moreover, Simplicius is not willing to cross the genera. Rather, he warns the reader to stay within the boundaries of analogical reasoning in order to avoid the possibility of a discourse marked by genera crossing, since the two subject genera are independent. Consequently, the assertion of identity is a mere expression of co-proportionality, and nothing beyond that.

Simplicius then explains the reason why these subject genera are independent: "the moving object, though coming into different places, can correctly be said to be identical in substrate, since it remains in existence, but how can change and time and in general everything that has its being in becoming be identical in substrate?"[63] Although Simplicius's theory of "being in becoming" deserves a special investigation, I shall set it aside for the present. Basically, what he means to say is that, whereas a point or a stone continues to exist (after it has completed its motion), time has its being in becoming and does not exist in any other way. The same applies to the now. It is enough to say here that, in order to avoid fallacious reasoning, Simplicius rightly cautions us not to attribute the predicates of the moving object to the now. An interesting ramification of this thesis (that being is in becoming) is that the now cannot be one, since time and, by implication, the now, does not last but has its being in becoming, i.e., it has come, and it has ceased to be. Hence, the notion of "being in becoming" and that of "sameness *qua* substrate" do not seem to square well.

Simplicius also notes that there is not a perfect analogy between the now and what is carried. The reason is that "if there are these three, magnitude, change and time, mutually dependent, as he says, magnitude being limited by points, time by the now, what is analogous to these, I mean the point and the now in the case of change. For there should be some other limit to change and not the changing thing. For what relationship has this to the now and the point?"[64] Indeed, as A is to B, so C is to D and so E is to F stands for: as the point is to magnitude, so the move is to motion and so the now is to

discrete quantity in motion is music. Hence, "quantity has produced four sciences: immovable continuous quantity – geometry; movable continuous quantity – astronomy; immovable discrete quantity – arithmetic; and the movable – music." Ps.-Archyt. *Frs.* 6.12-5.

[63] Simpl. *In Phys.* 9.724.29-31.

[64] *Ibid.* 9.725.4-8.

time. Yet the analogy of a moving object disrupts this proportion. It is therefore imperfect, and things presented in this way are not co-proportional. Simplicius, in the end, seems to be dissatisfied with Aristotle's analogies. He regards the analogy of the point and the stone as forced;[65] and he would have to qualify the analogy in some way in order to avoid considering it "altogether harsh".[66]

What is important in this context is the at times implicit and at other times explicit affinity of Simplicius's thought with Neopythagorean thought. Yet we can also see that Simplicius, no matter how willing he is to interpret Aristotle in a Neopythagorean fashion, is well aware of the limits of this approach (i.e., of reading Neopythagorean thought into Aristotle). He is careful not to over-impose Neopythagorean theories onto Aristotle's discourse. At times, however, he apparently cannot resist this temptation: for instance, his interpretative twist regarding the sameness of the now clearly draws on Neopythagorean philosophical background to support this interpretation. Similarly, Simplicius's interpretation of ὃ ποτε ὂν as substrate implicates subjectivity and receptivity of opposites in the now.

More importantly, Simplicius's assessment of Aristotle's analogical reasoning is that it does not require precision (μὴ ἀκριβολογώμεθα, "let us not split hairs").[67] Analogies help the reader to tackle the subject matter; but analogical reasoning fails to achieve the level of precision typical of syllogistic reasoning. Consequently, I understand Simplicius's statement as a warning about the limits of analogical reasoning. The implication is that the terms of analogical reasoning should not be included in a demonstrative premise. Simplicius suggests that in order for us to grasp the full meaning of Aristotle's statements with respect to the now, we must move forward and explore *Physics* VI, since it may contain the missing answers and clarifications. So let us turn to it.

[65] ἀλλ' ἡ ὁμοιότης βίαιος δοκεῖ ἡ πρὸς στιγμὴν καὶ λίθον. *Ibid*. 9.725.15-16.
[66] *Ibid*. 9.725.23.
[67] *Ibid*. 9.725.17-18.

5. Transitioning to Physics VI

In his commentary on *Physics* VI, Simplicius investigates in what sense the now or any indivisible relates to motion. His interpretation of Aristotle's theory in *Physics* VI is of great help in discerning the problem of the now's otherness and its relation to motion. Previously Simplicius made a few attempts to address the issue of the now as subject to motion in Neopythagorean fashion. This was partially grounded in Aristotle's analogy between what is carried and the point. Another (and alternative) attempt entailed presenting the now as the principle of time, i.e., that from which time derives. This was tied to the notion of countability. Moreover, Simplicius's interpretation of Aristotle's theory was also premised on the thesis that magnitude, motion, and time follow (or, rather, are followed by) their principles. Yet he found the analogical reasoning in *Physics* IV to be compromised by imprecision. Aristotle, however, had another approach to the issue, which involved continua and indivisibles.

In his commentary on *Physics* VI, Simplicius's main point of concern is the now's otherness. How is it other and other? According to the dilemma of the now, the now cannot be other and other since in order for it to be so the previous now must have ceased. Yet, he notes, it is impossible to conceptualize the "when" of its having ceased since it can neither have ceased at itself (as that is when it existed), nor at another now since nows are not next to each other; therefore, its having ceased at another now would entail its simultaneity with an infinite number of nows, which is impossible.

First of all, the question of whether the now is subject to coming into being and ceasing is posited. What moves has moved and what has moved has been moving, according to Aristotle.[68] What moves must be divisible, progressing part by part. Consequently, one part of a moving thing must be at the starting point and another part at the end point or in the middle.[69] Motion and time are infinitely divisible. Yet the now is indivisible, and there is no prime now at which what is carried has departed from rest and started moving. In what sense, then, and when can anything move in the now and

[68] Arist. *Ph*. 237b3-6.
[69] *Ibid*. 234b15-19.

in what sense can the now be subject to motion of some kind? To find out whether the now is self-differentiated through motion (i.e., that it is the same in substrate and other and other *qua* subject to motion or quasi-motion, i.e., have moved or ceased to move), let us consult Simplicius and also consider his conjecture regarding "when" the now has ceased.

6. The Homonymy of Have Moved

Simplicius's interpretation of Aristotle's theory of indivisibles is grounded in the theorems that nothing moves in what is indivisible and that an indivisible is not *per se* subject to motion. An important task in this context is to cast light on the homonymy of "have moved", which can mean: 1. Having traversed the whole distance and being at the end point. 2. Having traversed some distance while still being in motion. 3. Having abruptly moved at an indivisible or atomic (i.e., uncuttable) magnitude with the atomic move at an atomic time. These homonymous appellations need to be considered in order to discern the sense in which an indivisible now (i.e., an instant of time) and motion go hand in hand without jeopardizing the integrity of Aristotle's theorems.

Regarding the first meaning, Simplicius refers to Aristotle's theorem, according to which it is impossible for a thing to both move or be moving and to have moved, i.e., have completed its motion. Thus, "he [Aristotle] proves that it is not possible that moving [with] one of these motions to be indivisible, assuming in advance that it is impossible for 'something moving from somewhere to somewhere simultaneously to move' toward that to which it is moving 'and to have moved', and to be there [at the place] toward which it was moving."[70] It should be noted that the example adduced by Aristotle may appear to be misleading: if "a man is walking to Thebes, he cannot be walking to Thebes and at the same time have completed his walk to Thebes".[71] Yet Simplicius explains the rationale behind it by claiming that if that is the case, then:

[70] Simpl. *In Phys*. 10.933.14-17. Konstan's (1989) translation.
[71] Arist. *Ph*. 231b30-232a1.

it will be moving over the whole, but no longer will it be moving also along each of those indivisible portions. Having posited this, [Aristotle] draws absurd consequences by means of the following consideration: the motion will be composed not of motions [*kineseis*] but of moves [*kinemata*], that is of the limits of motion, and of 'having moved'. For the motion DEF will not have the portions D and E and F as motions, for these [portions] were supposed to have moved, not to move. Similarly, the portions of moving [*kineisthai*] too will be, not a moving, but rather a having moved, and moving will be divided into portions which are not a moving, but rather a having moved.[72]

Simplicius then endorses Aristotle's conclusion and states that, on the contrary, walking to Thebes occurs before being in Thebes. He then makes some further important comments: "it is necessary, accordingly, either that it traverse earlier and have traversed later, or that it simultaneously traverse and have traversed; for there is nothing between [these alternatives]. But if, traversing earlier, it has traversed later, the motion would be divisible."[73] What if a thing simultaneously traverses and has traversed? Is this possible? We will see soon that it is. Both alternatives are, therefore, viable; but they do not apply to the same kind of motion.

Simplicius then scrutinizes Aristotle's theorem, according to which everything that is moving has moved earlier.[74] He clarifies this (second) sense of "have moved": "for he [i.e., Aristotle] takes [the term] 'it has moved', as I said, not in the sense that what is said to have moved has already stopped its motion, but rather in the sense that it has already traversed some amount in its moving."[75] He also notes that in cases of continuous things the converse also holds true, "[namely] that it is necessary that everything that has changed be changing earlier."[76]

Yet he also points to Alexander's attempt to explain the issue by referring to some passages from the *Metaphysics*:

Alexander says that the [phrase] in the beginning of the passage, [namely] 'as many as are divisible and continuous', is added because there are some things, in the case of which we

[72] Simpl. *In Phys*. 10.934.9-17.
[73] *Ibid*. 10.933.22-25.
[74] "that which has changed must have been changing and that which is changing must have changed" (ὥστε ἀνάγκη τὸ μεταβεβληκὸς μεταβάλλειν καὶ τὸ μεταβάλλον μεταβεβληκέναι). Arist. *Ph*. 237b3-4.
[75] Simpl. *In Phys*. 10.992.20-21.
[76] *Ibid*. 10.994.17-19.

predicate that they came to be, although they do not have their being [*einai*] by virtue of coming to be [*genesis*]. We say that contacts, at least, have come into being, [but] not, indeed, that they are coming to be.[77]

Simplicius concedes this thesis. He also brings up the issue of qualitative change: that there are instances of such a change in which the change takes place all at once, i.e., instantaneously. He then states that "in these cases changing and having changed do not precede each other".[78] Aristotle, according to Simplicius, later clarified this thesis by arguing that all such cases still complied with the general rule, according to which motion is a gradual progression from and to something, even though its gradual aspect may escape our attention.

This thesis, however, fits indivisibles perfectly. Thus, Simplicius argues: "contact, if it does not have its being by virtue of coming to be, is not said to have come to be either, but rather to be without coming to be. Therefore, in the first [book] of *On the Heavens* [280b6-9], Aristotle says that one of the meanings of 'ungenerated' [*agenetos*] is what [occurs] according to contact."[79] The thesis of being without becoming is then entertained. The same applies to perfections or excellences and pleasures in *EN*.[80]

This explanation, however, does not seem to satisfy Simplicius. Although he does not directly discuss the issues associated with this interpretation, it is possible to discern what they are. The thesis from the *Metaphysics*, according to which contacts are and are not, does not seem to fully accommodate the now. If something is and is not, is it the same thing or other and other? What can assure the sameness of such a thing? Eternal things are and are not, while being always the same. Yet physical phenomena are different.

[77] *Ibid*. 10.997.30-998.1.
[78] *Ibid*. 10.998.11-12.
[79] *Ibid*. 10.998.17-19.
[80] They are exercised and made fully and completely manifest at each instant of an action. Recently this topic was persuasively argued by Ugaglia, who cited a different source for this same thread (i.e., *Soph. el.*): Ugaglia (2023) p. 498. Aristotle thus seems to draw a demarcation line between human action which exhibits excellence and natural motion by arguing that such an action cannot be a gradual transition from and to opposites, as that would entail seeing coming from the absence of seeing through a gradual progression. The same applies to an action in accord with virtue, pleasure, etc.

This also applies to the nows. Eternal things do not have their being by virtue of coming to be. The now's being, on the other hand, is in becoming.

Let us assume that one now is and then is not. Is the now that is or exists the same as the now that has disappeared? Simplicius does not appear to have an answer to this. The notion that something "is and is not" is, therefore, problematic in relation to Aristotle's thesis that the now is the same *qua* ὅ ποτε ὄν or, according to Simplicius, the same in substrate. The substrate must remain: it cannot be and then not be without having ceased and been replaced by a new and different substrate. "Has moved", on the other hand, does not jeopardize the sameness of the now. It is the same now that has moved without ever being in the process of coming and without being destroyed (without having ceased). This represents the third meaning of "has moved", one that applies exclusively to indivisibles.

This thesis is further supported by the following statement: "he [Aristotle] says, 'let us say' next after these things 'that a partless thing cannot move except incidentally', by being in a moving body or magnitude. How this is meant he indicated in the example in respect to the boat: for things in it that are not moving in their own right themselves too move locally incidentally, by virtue of being in the boat that is moving."[81] Motion is thus predicated of an indivisible *per accidens*. An instant participates in motion *qua* belonging to the moving body, etc. Another possibility is that motion is predicated of the now not precisely but analogically: as things not moving are to motion *qua* being in the boat, so an indivisible is to motion *qua* belonging to the moving body.

Simplicius also considers Alexander's conjecture that this same thesis applies to the soul in the body. Yet Simplicius, due to his Neopythagorean leanings, denies that this application is valid, silently alluding to the Neopythagorean definition of the soul as a self-moving number.[82] The same is true of motion in the now:

[81] Simpl. *In Phys*. 10.1024.20-23.

[82] Iambl. *De An*. 4.6-9. On the issues associated with this notion and on Iamblichus's solution, which seeks to overcome the opposition of actual and potential, see Opsomer (2012) pp. 259-90.

in fact, this is impossible in another way as well, for it has been proved that it is necessary that what has moved be moving earlier, just as [it is necessary] that what is moving also have moved earlier. But if there was motion in a now, [then] there occurred something that had moved which did not go through moving toward this [state]. For there was not [supposed to be] moving in a now, but only having moved, for a limit [of moving] is in a limit [of time].[83]

He therefore concludes: "it is obvious from what has been said before that it is not possible to move in a now, but only to have moved."[84] The same, by implication, applies to the now *qua* subject to motion. It cannot move but it has moved.

It should be noted that throughout the commentary Simplicius takes the view that Aristotle's theorems concerning indivisibles were not fully persuasive to everyone and mentions the Epicureans. Yet what may not be apparent is the affinity of Simplicius's discourse with that of Pseudo-Archytas, who, arguably, introduced the theorem that time is made up of a series of nows. Thus, the temporal continuum, according to Pseudo-Archytas, is made of indivisibles.[85] This innovative theory was in the back of Simplicius's mind. He seems to be arguing that the now cannot be subject to motion; yet it is appropriate to say that it has moved without ever being in motion. This, I assume, is a Neopythagorean extension of Aristotle's thesis. It allows Simplicius to conceptualize the now as subject to quasi-motion, which is a kind of motion that differs significantly from motions of continuous things.[86]

7. Reconsidering the Issue of "When"

It has been established by Aristotle in *Physics* IV that the now is both always the same and ever other and other, but not in the same sense. It is the same *qua* ὃ ποτε ὄν and other and other in being and *logos*. Yet how is it other and other? This, according to the dilemma of the now, entails that the previous now must have ceased; but when has it ceased? We should bear in mind that Aristotle's original language with regard to the dilemma indicates that what

[83] Simpl. *In Phys*. 10.1027.26-31.
[84] *Ibid*. 10.1029.20-21.
[85] Ps.-Archyt. *Frs*. 29.12-18.
[86] Indeed, this is a concept may even be considered as foreign to Aristotle's thought, being in open contradiction with his entire treatment of the continuum.

is at stake is the event of cessation or corruption (φθείρω), i.e., that of substantial change and not a mere motion/change (which primarily designates non-substantial change) or mutation (which can designate both substantial and non-substantial change depending on the circumstance). The term corruption or cessation is thus clearly articulated in this context: "If the now is always different then the now which formerly was must have ceased to be."[87] How, then, can the now retain its substrate?

This seems impossible, unless we assume that the term substrate designates some generic matter of the now, one that is not peculiarly qualified but which survives throughout the cessation. What is clear, however, according to Simplicius, is that if the now is the same in substrate, it has definitely changed or moved. The kind of motion/change at stake is not among the Aristotelian kinds (e.g., quantitative, qualitative and local) but is instead a sort of quasi-motion. Hence, the same now (which is the same in substrate, number and form) has changed without ever being in transition. Simplicius thus softens Aristotle's terminology by setting aside cessation and giving priority to such terms as change and mutation in order to accommodate his thesis.

If it has ceased, when has this occurred? Unfortunately, Aristotle did not offer any hints on how to resolve this aporia. Perhaps he thought of it as of a superficial (i.e., not genuine) matter and decided not to devote any time to it. A possible reason is that a cessation of the now at a now can lead to circular reasoning. Simplicius, on the other hand, takes this dilemma seriously but adjusts Aristotle's jargon accordingly. If the now has changed, when has this occurred? At itself or at another now which is next to it? Simplicius accepts that it cannot have ceased or rather changed at itself. If it has ceased when it existed, it will both exist and have ceased to exist simultaneously, which is impossible. Yet Pseudo-Archytas's now seems to have ceased at itself. It is swift and has ceased before we realize it. This finds support in some modern scholarship.[88] This thesis, however, leads to a contradiction; therefore, Simplicius cannot accept it. Can it, then, have ceased at the now which is next to it? In his commentary on *Physics* IV Simplicius analyses Aristotle's thesis that limits are not next to each other, that they cannot touch and therefore be contiguous (to be

[87] τὸ δὲ νῦν μὴ ὂν πρότερον δὲ ὂν ἀνάγκη ἐφθάρθαι ποτέ. Arist. *Ph*. 218a11-16.
[88] See Kretzmann (1976) pp. 91-114.

both next to and touch) or continuous (have a common boundary). This corresponds to Aristotle's doctrine in *Physics* VI. Yet, when commenting on this book, Simplicius seems to allow for it to have changed at the now which is next to it – with, however, a qualification.

Nows are not next to each other. Aristotle defines being next to in the following way: to be next to is to have nothing of the same kind as itself in the middle.[89] Yet between any two nows there is time, and time is infinitely divisible. It is divided at a now. Hence, between two nows there are an infinite number of nows, i.e., an infinite number of things of the same kind. Consequently, two nows cannot be next to each other. The now which has ceased cannot have ceased at the now next to it. As Aristotle persuasively argues: "it would exist together with the infinite nows between the two – which is impossible."[90]

Simplicius makes an important qualification to this thesis. There is a particular sense in which the nows are not next to each other. Simplicius quotes Eudemus's account of Aristotle's definition of being next to and of its ramifications:

> Eudemus [fr. 99 Wehrli] treated the argument in the following way: 'For if,' he said, 'partless things are consecutive, then it is absolutely necessary that something not of the same kind be between them, so that there would not be a point, but [rather] a line or empty [space] between points in a length. [If a line], accordingly, the line will not be made of the points; for the consecutive points are not in it. But if there is empty [space], there will be more empty [space] in the continuous [stretches] than the things of which they are made, that is, the so-called consecutive points; or [rather], there will be no magnitude at all. For just as two points that are touching produce no length, so neither do a point and empty [space].'[91]

According to Simplicius, Eudemus "correctly understood what was said by Aristotle, [namely] that he was not denying absolutely that point is consecutive to point or now to now, but rather that they were consecutive in such a way that a length or [stretch of] time was made of them."[92] He thus assumes that, with this qualification, the now can be next to another now.

[89] Arist. *Ph.* 227a1.
[90] *Ibid.* 218a21.
[91] Simpl. *In Phys*. 10.928.28-229.3.
[92] *Ibid.* 10.929.4-6.

Again, Simplicius seems to be reassessing Aristotle's theory in order to make it compatible with that of Pseudo-Archytas. The result is a now which is subject to quasi-cessation, which ceases and has ceased either at itself or at another now, which is and is not next to the previous one, but with the qualification put forward by Eudemus.

Finally, Simplicius also entertains another important aspect associated with the issue at stake. Nows are and are not next to each other. And if the now has ceased at another now which is and is not next to it, at precisely what now has it ceased? Although Simplicius does not examine this issue directly, he discusses it indirectly in relation to the "when" of a moving thing in respect of its coming to rest. When he analyses the issue of coming to rest, he extends Aristotle's thesis that there is no beginning of motion to that of coming to rest. He then makes the following claims:

> If, accordingly, 'it is time in which first' it is said to halt, and not some atomic [i.e. indivisible (*atomon*)] thing, and every time is divisible to infinity, there will not, consequently, be any first [bit] of it, nor will there, consequently, be any beginning of halting, in which the halting thing halts first. For as is the time in which the halting [occurs], so too is the halting in it. Accordingly, from the fact that it halts in any of the portions whatsoever of that which is divided to infinity [i.e. time], he proved that there is not any first thing in which it halts. For neither is there any first thing of that which is divided to infinity, but rather, if halting is moving, and in the case of moving it has been proved that it is impossible to take anything in which first a moving thing moves [cf. 1006.21-22], it is obvious that neither is it possible to take any first thing of halting.[93]

What moves comes to rest in time, and time is infinitely divisible. So, there is no prime now in respect to coming to rest. Simplicius's answer is that it halts in any of the portions of time. The same may apply to the now if we conceptualize it as subject to quasi-motion.

Let us assume that if the now has ceased, it must have ceased at another now. But nows are the limits of the temporal continuum and therefore are not sequentially ordered. This density of nows is a problem. If the now has ceased, at what now has it ceased? Simplicius's solution, if applied to this issue, is that it has ceased at any of the nows or at any portion of time, no matter how small, since there is some kind of quasi-order of nows, as they are

[93] *Ibid*. 10.1008.12-21.

before and after. Nows cannot be ordered randomly so that the now which belongs to the time which comes before can be posterior in relation to the now which belongs to the time which comes after. The previous now cannot therefore have ceased at that which is prior to it, but only at the posterior. At what posterior now must the prior now have ceased, taking into account that there is an infinite number of nows between any two nows?

Simplicius's answer is that it must have ceased or, rather, changed at any of the posterior nows. This posterior now, which is among the densely ordered series of nows, must not, however, be very "distant", so as not to allow irregular movements of the now and, consequently, of time (a leaping of time through its chunks that can make time irregular), because the now should be a "part" of a densely ordered set which belongs to the same temporal stretch. Some modern scholars seem to have followed the same path, taking Simplicius's interpretation as their point of reference. For instance, Sorabji's subtle interpretation of Aristotle's instant is along the same lines,[94] and is thus indebted to that of Simplicius.

Yet there is another possible solution implicit in Simplicius's interpretation. If the now has moved or has ceased, and if nows are not dense but rather constitute a temporal continuum, as *per* Pseudo-Archytas,[95] then the now must have ceased at the now which emerges in the "place" of the previous now. Some passages from Simplicius's commentary on *Physics* IV and from the *Corollaries* seem to point in this direction. However, this solution goes against Simplicius's assessment of the sameness or difference of the now in relation to Aristotle's standardized taxonomy. The now, Simplicius maintains, is the same in form and in number. Yet it seems always different *qua* being before and after. Pseudo-Archytas's numerically differentiated nows, on the other hand, are always other and other, come and cease, etc.[96] Simplicius perhaps suggests that the now has moved without having ceased and that this quasi-motion does not exclude the possibility for the now to be in the process of transition from and to opposites. It is the same now. It must

[94] Sorabji (1983) pp. 10-2.
[95] Ps.-Archyt. *Frs*. 29.17-8: καὶ οὕτως ἀεὶ συνάπτει τὸ νῦν συνεχῶς ἄλλο καὶ ἄλλο γινόμενόν τε καὶ φθειρόμενον, κατὰ μέντοι γε τὸεἶδος τὸ αὐτό.
[96] *Ibid*.

be the same *qua* its substrate. Yet a series of moves or, rather, of having moved is precisely what makes up time. The now thus obtains temporal properties of being before and after. This is a possible Neopythagorean interpretation, according to which the flow of the now, i.e., its ontological instability, is precisely what makes up time. Perhaps time is and is not made up of a series of nows; yet they are not really many serially ordered nows but instead one and the same ontologically unstable now.

Another possible interpretation, which is also Neopythagorean, is associated with the thesis that moving things sliding through the now are responsible for the now's difference (*per* Iamblichus).[97] We should include, I assume, all such possibilities due to Simplicius's overall commitment to Neopythagorean thought. Simplicius's thinking on the issue of the now is thus by and large determined by the Neopythagorean framework. Although he aims to stay within the boundaries of Aristotle's theories, his thinking cannot be fully detached from the Neopythagorean heritage. Hence, as I understand it, Simplicius's interpretation of Aristotle's paradox, fascinating as it is, may not perfectly reflect Aristotle's own thought processes. On the other hand, it is also possible that Aristotle's discourse on the subject of time and the now is itself imbued with "Pythagorean" traits.[98] If so, then Simplicius's interpretation can be considered authentic and well grounded.

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[97] Simpl. *In Phys*. 9.792.35-793.1; cf. Nicom. *Intr. Arith*. 1.1.3.10-2.

[98] Just to give a few examples: Aristotle's definition of time as the number of motion is quite surprising. One way of thinking of this definition is to assume it to be grounded in the epistemic thesis of Philolaus that nothing is known apart from number. Philol. *Fr.* 4: "all the things that are known have number. For it is not possible that anything whatsoever be understood or known without this". Therefore, "knowledge only arises when we know the specific numbers that govern things." Huffman (1993) p. 242. Time thus cannot be known apart from number. Yet Aristotle's statement sounds even stronger, as it does not apply merely to the agenda of grounding the studies of time in this particular epistemic thesis but also to the matter of being and thus aims to unravel the ontological foundations of the phenomenon of time through the theory of number. In some ways, Aristotle's definition reminds us of his "Pythagoreans" (as they are depicted in *Metaphysics*), who conceptualized things as numbers and thus extended the theory of number beyond the boundaries of epistemology to ontology. Arist. *Metaph*. 987a13-19. Moreover, as we learn from Aristotle in *Ph.* IV, the now is either somehow analogous to the moving object and to the unit of number or it is such and such because of the presence of motion in it. What can be more indicative of a "Pythagorean" interpretation than this? Finally, Aristotle's endorsement of the

8. Reassessing the Peripatetic Interpretation

As we have seen, there are two essential approaches to Aristotle's paradoxes, leading to two alternative interpretational threads. We can roughly designate them as Neopythagorean and Peripatetic. Simplicius seems to accept the Neopythagorean approach and interpretation, but with some qualifications. This interpretation is clearly seen in modern scholarship, e.g., Evans, Hussey, and Cornford, among others.[99] Simplicius appears to reject the Peripatetic approach and interpretation. A fundamental disagreement with regard to the ontology of number is the watershed which separates them: the Peripatetic concept of number as something potential which is actualized when discovered, in contrast to the Neopythagorean concept of number as actual and perhaps a self-moving being.[100] This also concerns time as the number instantiated in motion and its unit or monad.

Throughout his commentary, Simplicius continues to evaluate Alexander's interpretative threads critically, even if some of these threads clearly influenced his own interpretative endeavors. What he fundamentally disagrees with are Alexander's theses that number is not part of the numbered and that number does not exist apart from the enumerator who brings it into existence.

> 'But number', says Alexander, 'is not an element in what is numbered; so that time, being a number, is also not thus in change. Neither is the name in that of which it is the name in the way that white may be, because the numerically identical name belongs to many things simultaneously, as is the case with number, but white is not identically the same in many things.'[101]

He then further expands on Alexander's account and questions the validity of his conjectures:

> But, if time gets its existence from the enumerator, and thus comes about in change, it will not belong to it as an element in it. Therefore it does not mark its divisions. On this matter

conjecture of "the Pythagorean Paron" with regard to time also speaks up for itself. Arist. *Ph*. 222b17-19.

[99] See Evans (1955); cf. Hussey (1983).

[100] That is what Iamblichus defined as "the number of self-moving movement [regarded] as a time-like monad" (τῆς γὰρ αὐτοκινήτου κινήσεως ὡς μονάδος χρονικῆς ἀριθμός). Simpl. *In Cat.* 352.13.

[101] Simpl. *In Phys*. 9.764.35-765.3.

one must ask Alexander how the number in what is numbered does not belong to the enumerable, or how time that is the number of change as the enumerable does not belong to change nor is an element in it, although it is said to be an affection and condition of change. For he said 'or is it because it is an affection or condition of change, being its number'.[102]

Although Simplicius rejects Alexander's explanation as invalid, it is very much along the lines of Aristotle's theory of the actualization of number and numerical relations. It is therefore reasonable; and Aristotle's theory of time and of the now seems to point in this direction. It is worth noting that Alexander's interpretation is very much present in modern scholarship and has recently been entertained by various scholars.[103] What is particularly important in this context is Simplicius's capacity to identify alternative and often antithetical interpretations of the issue at stake and to give a clear assessment of these interpretations.

Conclusion

Simplicius's interpretation of Aristotle's theory of the now is intricate, subtle and driven by Neopythagorean thought. His attempt to make sense of Aristotle's vocabulary was influential in late antiquity and has left a mark on modern scholarship. His application of Aristotle's analogies to this issue has been regarded as enlightening because it clearly exhibits alternative interpretative threads and shows the utility and limits of Aristotle's analogical reasoning. Moreover, Simplicius's reassessment of the theorems in *Physics* VI, with the aim of clarifying Aristotle's propaedeutic considerations in relation to the subject of *Physics* IV, was warmly received in both late antique and modern scholarship. Overall, Simplicius's commentaries help the reader to understand Aristotle's at times very cryptic and puzzling discourse, enabling them to make sense of the intended meaning of his statements and of the

[102] *Ibid*. 9.765.7-13.

[103] E.g., among the most recent studies this interpretation is featured in Coope's monograph. Thus, "the Aristotelian solution to this puzzle depends on the view that nows, like other indivisibles, only exist if they are in some way marked out from a continuum." Coope (2005) p. 29.

theory in general.[104] Nevertheless, it is clear that his interpretation of Aristotle is at its root-core Neopythagorean.

The now, according to Simplicius, is the same in substrate. It is also the same in number (but with qualifications) and species. The otherness of the now is associated with his account of the now as before and after in time. It participates in motion in a very particular way, *qua* having changed without compromising the "flow of time," without making it irregular, without jeopardizing the unity of its substrate, which is receptive of such opposites as prior and posterior, before and after, etc. The now is therefore both one and many. There is no when of its having ceased. It remains and does not remain. It moves without ever being in transition, so that it has changed at a part of time associated with the same cluster of densely ordered potential divisions of time. What is important is that Simplicius, in his commentary, does not entertain the notion of the phases of time (e.g., transcendent, generative, generated, etc.) and of the now,[105] remaining faithful to Aristotle, whose now stays on the same plane, so to speak, and does not exhibit vertical differentiations.

Finally, a tendency among scholars to see Simplicius as first and foremost a historian of philosophy may not correspond to the view of him presented here as a very intricate thinker whose philosophical investigations and commentaries merit recognition as theories in their own right. While his philosophical innovations are more explicit in the *Corollaries*, his *Commentaries on Aristotle's Physics* also demonstrate a versatile thinker who endeavors to synthesize diverse and occasionally divergent threads into a coherent theory.

[104] Again, it can be argued that Simplicius often adopts positions that are in open contradiction to Aristotle. In the eyes of his contemporaries, however, whose philosophical training was linked to Neoplatonism/Neopythagoreanism, such a position seemed meaningful, cohesive and faithful to Aristotle's discourse.
[105] See Hoffmann (1980) and Dillon (2010).

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VARDAN ASLANYAN

ARISTOTLE AS THE BASIS OF NEOPLATONIC INSTRUCTION IN THE ARMENIAN TRADITION

Abstract

This article examines the role of Aristotle in the formation and development of the Neoplatonic educational system within the Armenian intellectual tradition from late Antiquity to the modern era. While Neoplatonism remained the dominant philosophical paradigm in Armenia for more than a millennium, Aristotelian logic and natural philosophy provided its indispensable propaedeutic foundation. Particular importance is attributed to David the Invincible, whose commentaries established Aristotelian logic as the preparatory stage of philosophical education and shaped the Armenian *cursus studiorum* for centuries. The article traces the development of this curriculum through medieval monastic schools and universities, highlighting the interaction of Greek, Syriac, Arabic, and Latin traditions and the continuous renewal of Aristotelian scholarship through translations, commentaries, and manuscript transmission. Special attention is devoted to Armenian and European manuscript collections, which testify to the central place of Aristotelian texts in Armenian intellectual life. Against the view that Aristotelian studies declined after the Middle Ages, the article argues for their continuity into the seventeenth-nineteenth centuries through new translations and printed logic handbooks. It concludes that Aristotle was not merely received in Armenia but functioned as a fundamental component of Neoplatonic education, shaping Armenian philosophy, theology, and scientific thought.

Keywords

Aristotle, Armenia, Logic, Neoplatonic Instruction, Curriculum

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1. The Reception of Neoplatonism in Armenia

According to historical sources and the current state of research, Neoplatonism was the dominant and enduring paradigm in the Armenian tradition throughout late antiquity, the entirety of the Middle Ages, and into modernity. Neoplatonism was readily adopted in the Armenian world through its pagan, Christian, and later Arabic branches, both in Greek before the creation of the Armenian script and, after that milestone, in the form of translations and multilingual commentaries. This reception significantly advanced Armenian philosophy, theology, and various scientific fields. And since Aristotle always held an indispensable introductory and explanatory role within Neoplatonic instruction, I aim to delineate the significance of Aristotelian studies in the Armenian Neoplatonic tradition throughout its entire duration.

To provide some context, there is evidence of a century-long presence of Armenian scholars at Hellenistic centers of education dating back at least to the first century BCE. Some of these scholars even rose to prominent positions in the School of Athens and other Hellenistic centers,[1] which introduced the philosophical treatises of the classical period to Armenian intellectual circles. However, we can speak of the genuine incorporation of Aristotle and Neoplatonism into the Armenian tradition only after the emergence of the Armenian script. This major development initiated a fundamental translation project known as the Hellenizing School,[2] which systematically transmitted ancient philosophical thought to the Armenian region. The first translators clearly recognized the need to enrich the linguistic framework and vocabulary of the newly formed writing system in order to translate demanding philosophical texts, such as those of Aristotle, and, of course, to compose their own treatises and commentaries. Even the late ancient Armenian historian Moses of Chorene, a disciple of Mesrop

[1] Aslanyan (2022) pp. 101-2; Zakaryan (2025) pp. 27-31.

[2] Dating between the 460s and the 730s. See more in Aslanyan (2022) pp. 88-95; Calzolari (2016) pp. 47-70; Muradyan (2014) pp. 321-48; Terian (2008) pp. 25-44. The translation of fundamental philosophical works, though, is not limited to the era of Hellenizing School: Plato's translations into Armenian, for instance, were completed in the 10th and 11th centuries.

Maštocʻ[3] (the developer of the Armenian alphabet), reports in his *History of Armenia* that Mesrop and the Patriarch Sahak sent a new group of students to Alexandria and Athens on account of the difficulties encountered with word formation.[4] The task of this group was to master Greek grammar and to find new ways of translating philosophical and grammatical terms accurately into Armenian. The scholars of the Hellenizing School created the necessary tools for translation by finding suitable equivalents for Greek prefixes and suffixes, without which the translation of philosophical works would have been unimaginable: e.g., ἐκ-/ած-, արտ-, δια-/տրամ-, παρα-/տար-, ἐπι-/մակ-, συν-/բաղ-,համ-, ὑπο-/ստոր-, ὑπερ-/գեր-, ἀνα-/վեր-, προ-/նախ-, προσ-/առ-, ἀπο-/բաց-, and so on .

Researchers have also provided lists of works translated by the Hellenizing School.[5] Among the most important translations produced during this period are: Aristotle's *Categories*, *Peri Hermeneias*; Porphyry's *Isagoge*; Iamblichus' *Commentary on Aristotle's Categories and Commentary on the Isagoge*; the pseudo-Aristotelian *On the Cosmos* and *On Virtues and Vices*; David the Invincible's *Definitions of Philosophy* and *Commentary on Isagoge*, as well as his commentaries on *Aristotle's Categories* and *Prior Analytics*. It is worth noting that the Syriac philosophical corpus, created during the corresponding period, consists of the same works by Aristotle, Pseudo-Aristotle and Porphyry that were translated into Armenian.[6] Moreover, the Hellenizing School translated two works of the *Organon* at the end of the fifth century and beginning of the sixth century: the *Categories* and *On Interpretation*,[7] which were notably the same treatises that Boethius translated into Latin around the same period (approximately 510-524). And although, according to the late medieval author John of Kʻrna, only these two works and the *Analytics* were known to the Armenian world before the fourteenth century,[8] other treatises by Aristotle, including apocryphal

[3] Armenian transliterations are given in the *Revue des Études Arméniennes* (REArm) system.
[4] Moses of Chorene, *History of Armenians*, III, p. 61.
[5] Arevshatyan (1971) p. 16; Akinian and Ter-Poghossian (1977) pp. 11-8.
[6] Calzolari (2016) p. 57.
[7] Arevshatyan (1980) p. 12.
[8] John of Kʻrna, *On Grammar*, pp. 36-7.

ones, were also widely cited in secondary sources such as the commentaries of David the Invincible.

The figure of David the Invincible stands out in the Hellenizing School. This Neoplatonist of the Alexandrian school elevated Neoplatonic studies to an institutional level in Armenia and emerged as a masterful commentator on Aristotle. Especially through David's philosophy, Aristotelian logic was introduced to the Armenian world and incorporated into the philosophical curriculum. David's commentaries on Aristotle and Porphyry, as well as his *Definitions*, were an indispensable part of the philosophical curriculum up to and including the eighteenth century, inspiring later authors to continue the tradition of Neoplatonic commentary in Armenia.

David's commentaries were written for a student audience to guide beginners on the path to philosophy. Therefore, he writes in great detail and with great clarity,[9] sometimes even adopting a passionate style to motivate and inspire his readers.[10] The treatises attributed to David are among the works known as ἀπὸ φωνῆς ('as dictated'), meaning they are based on notes taken during class.[11] Although some researchers consider David to be unoriginal or superficial,[12] because he drew on the commentaries of Olympiodorus, Ammonius, and Elias, reworking them into a broader form, his approach nevertheless served a pedagogical purpose and did not impose any limitations on his abilities as a commentator. Even Simplicius, in his extensive 400-page commentary on Aristotle's *Categories*, explains that he wrote only an introductory treatise intended to help the dedicated reader better understand the more

[9] For example, if we compare David's *Definitions of Philosophy* with the last three Alexandrians: Elias' treatise, according to Busse's edition, is twice as long as that of Ammonius Hermiae (twelve lessons - πράξεις), and David's treatise is twice as long as Elias' (24 lessons).
[10] As stated in the introductory sentence of his *Definitions*, which is considered a classic statement in Armenian philosophy: "Those who love philosophical discourses, if they have touched the pleasure that derives from them with the tip of their finger (ἄκρῳ δακτύλῳ γευσάμενοι), and who have bid farewell to all earthly cares, are clearly driven towards them by some kind of sober madness", transl. by Gertz (2018) p. 83.
[11] Calzolari (2012) p. 140.
[12] Khostikian (1907) p. 79; Wildberg (1990) pp. 40-1. Busse (1892) p. 13, describes David's style as "prolixity without much thought".

abstruse commentaries of Porphyry and Iamblichus.[13] Khostikian and Busse argue that, although David is described in the Armenian tradition as an outstanding and highly original philosopher, he is the least original figure of the Alexandrian school, and that he 'buried the old Neoplatonic tradition with his person'.[14] Contrary to this view, other scholars consider his commentary on the *Isagoge* to be one of the finest on this frequently studied work.[15] Furthermore, his commentaries on Aristotle and his *Definitions of Philosophy* influenced prominent thinkers such as John Damascene, al-Kindī, al-Fārābī, and Avicenna.[16]

In 1833, the Mekhitarist Congregation in Venice published a collection called *Corpus Davidicum*, containing all the works and translations attributed to David in the Armenian tradition. The corpus includes translations of the works of Aristotle and Porphyry, as well as four commentaries on them and two theological treatises. This large number of works could not, of course, have come from the pen of a single author, which is why this legacy should be viewed as a collective result of the first two stages of the Hellenizing School. [17] Therefore, scholars distinguish, under the collective personality of 'David the Invincible', a total of seven different authors who carried out their philosophical and translation activity between the 450s and the 730s.[18] This multifaceted approach to Davidic heritage is largely accepted in modern scholarship. In 2004, the Center for Armenian Studies at the University of Geneva initiated a project entitled *Commentaria in Aristotelem Armeniaca – Davidis Opera*, the main objective of which is to recover and publish the critical Greek-Armenian texts of David's Aristotelian commentaries, resulting in an ongoing cascade of scholarly publications, conferences, and workshops.[19]

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[13] Simplicius, *In Cat.* III.13-17 (Barnes 2009, p. 5).
[14] Khostikian (1907) pp. 74, 76-7, 80.
[15] Helmig (2018) p. 2096; Barnes (2009) p. 13.
[16] Arevshatyan (2009) pp. 178-9.
[17] Calzolari (2014) p. 355.
[18] Helmig (2018) p. 2085. One of these Davidic personalities has been suggested as a possible author of the *Corpus Dionysiacum* (Aslanyan 2022, pp. 37-43).
[19] Three out of five planned volumes of the *Commentaria in Aristotelem Armeniaca – Davidis Opera* are already published by Brill in the series "Philosophia Antiqua" (vols. 116, 122, 127).

David the Invincible marked the beginning of the Aristotelian epoch in the philosophical commentary tradition in Armenia, and many renowned medieval Armenian philosophers and theologians up to the period of scholasticism followed his lead, establishing themselves as masterful commentators on Aristotle. Noteworthy are the commentaries by Vahram Rabuni, Chancellor of the Cilician Armenian Kingdom, on the *Isagoge*, *Peri Hermeneias*, *Categories*, and *On the Cosmos*; and those by the headmasters of Tatev University John Orotnec'i (on the *Categories*, *Peri Hermeneias*, and a treatise entitled *Explanations of the Complicated Questions in Porphyry*) and Gregory of Tatev (on the *Isagoge*, *On Virtues and Vices*, and on the Aristotelian commentaries of David). John Orotnec'i had a particular affinity for Aristotle, frequently quoting works of Aristotle that were unknown in Armenian translation (e.g., *Physics*, *Topics*), as well as Aristotelian commentaries by Avicenna and Averroes.[20] These numerous medieval Armenian commentaries on Aristotle could themselves serve as the subject of scholarly publications.[21]

2. The Formation of the Neoplatonic Educational System in Armenia and its Aristotelian Foundations

As mentioned above, since antiquity, classical philosophical works and Neoplatonic commentaries have been studied in Armenia directly in Greek and translated into Armenian, leading to the creation of a unique Armenian *cursus studiorum*. This instructional system was based on the classical approach of the Hellenistic schools, but gradually developed a distinct and elaborated form through continuous reforms by the headmasters of Armenian monastic schools and universities. First, however, the Neoplatonic instructional system underwent major transformations throughout antiquity. By the end of the first century CE, the tripartite

Two upcoming volumes will be dedicated to David's *Commentary on Aristotle's Categories* and his *Prolegomena to Philosophy*.

[20] Grigoryan (1980) pp. 34-5.

[21] We possess five Armenian commentaries on *Categories*, three on *Peri Hermeneias*, one on the *Analytics*, and one on *Metaphysics* written before the 17th century (Grigoryan 1980, pp. 28-46).

division of philosophy into ethics, physics, and logic – adopted by the Hellenistic schools – was modified by Plutarch for pedagogical purposes and presented as a model of gradual ascent along the educational path: logic was regarded merely as preparation for philosophy, while theology, also called metaphysics or epoptics, was regarded as the culmination of philosophy.[22] Similarly, Theon of Smyrna considered the disciplines of logic, politics (instead of ethics), and physics as preparation for epoptics.[23] Additionally, there was the tripartite scheme of the Middle Platonist Alcinous (2nd century CE); in his textbook Διδασκαλικὸς τῶν Πλάτωνος δογμάτων, he reformulated the Hellenistic tripartite division into practical philosophy, theoretical philosophy, and (Platonic) dialectics.[24] Building on this basis, Gregory of Tatev, in the fourteenth century, describes a division of philosophy in the Armenian tradition that synthesizes these three classical divisions and is structured as follows: philosophy (excluding the preparatory stage) is divided into two parts:

> Practical Philosophy includes three main areas according to Aristotle: 1) Ethics, 2) Economics, and 3) Politics; Theoretical Philosophy comprises 1) Arithmetic, music, geometry, and astronomy,[25] 2) Physics, and 3) Theology (Metaphysics) regarded as the pinnacle of philosophy.[26]

As for logic, particularly the corpus of works by Aristotle and Porphyry, it has traditionally served as the preparatory stage in philosophical education. Even Ammonius Saccas, the precursor of Neoplatonism, strongly recommended beginning not with ethics, but by studying philosophical subjects in the following order: logic, ethics, physics, mathematics, and theology.[27] The introduction to Aristotelian logic was typically provided by Porphyry's *Isagoge* and the extensive commentaries on it by later Neoplatonists such as

[22] Plutarch, *De Iside et Osiride*, 382d (Perkams 2015, p. 150).
[23] Theon of Smyrna, *Expositio rerum mathematicarum*, pp. 14-5.
[24] Perkams (2015) p. 151.
[25] The study of these disciplines (three to five in number, depending on whether arithmetic and stereometry are counted together with geometry or separately) was also prescribed by the Pythagoreans and Platonists before the study of philosophy (Justin Martyr, *Dialogue with Trypho*, II.4; Theon of Smyrna, *Expositio rerum mathematicarum*, p. 14).
[26] Gregory of Tatev, *Handbook for Winter Semester*, XXXII, p. 163.
[27] Ammonius, *In Cat.* V.31-VI.22 (Tarrant 2014, p. 26).

Ammonius Hermiae, David, and Elias. These Neoplatonists addressed first-year students in their commentaries on Aristotle's *Categories* or Porphyry's *Isagoge*, indicating that these texts were assigned at the start of the curriculum.[28] After this initial stage, students proceeded to study the works of Aristotle and Plato in a specific sequence,[29] beginning with Aristotle before moving on to Plato. This order was followed because Neoplatonists regarded Plato's philosophy as more inspired and superior to Aristotle's. Accordingly, Aristotle's *Metaphysics* occupies a position in the Neoplatonic curriculum midway between his natural science and the true and perfect theology found in Plato's *Parmenides*. It may seem paradoxical, then, when David suggests that an exegete of Aristotle must be familiar with all of Plato's works, while simultaneously presenting Aristotle's works as an introduction to Plato's.[30] However, it is generally understood that the works of both philosophers serve to illuminate and interpret each other, creating strong interconnections between all the branches of philosophy. As David explains:

> One ought indeed to know, that Aristotle always discourses on nature even when writing theology, whereas Plato, by contrast, is always the theologian, even while studying nature, and introduces the doctrine of Ideas everywhere.[31]

Thus, the study of Aristotle's works was not an end in itself for the Neoplatonists but rather a necessary preparation for engaging with Plato's philosophy.[32] Therefore, according to David, one must begin with logic as a tool and only then learn where and how to apply it.[33] Since Plato did not write a treatise dedicated to logic, Aristotle's logical works were used as a substitute tool for the introduction to philosophy (hence, the term ὄργανον – tool, instrument).

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[28] Hadot (1991) p. 182.
[29] Calzolari (2012) p. 135.
[30] David, *In Cat.* 123.9-11 (Hadot 1991, p. 185).
[31] David, *In Cat.* 120.30-121.3 (Hadot 1991, p. 183).
[32] Hadot (1991) p. 189.
[33] David, *In Cat.* 118.20-24 (Barnes 2009, p. 9).

3. Aristotelian Studies in Armenia in the High and Late Middle Ages

Advancing the development of the Neoplatonic curriculum, the study of the trivium and quadrivium – systematically introduced in late antiquity as a foundation for philosophical studies – became the cornerstone of university education during the High and Late Middle Ages. In the High Middle Ages, the study of the seven liberal arts and the associated curriculum were once again rigorously regulated in Armenia. Gregory the Magistros (eleventh century), founder of the school in Ani, the capital of Greater Armenia, and translator of Plato's dialogues, justified in his letters the necessity of dividing the seven liberal arts – also called the "encyclopedic arts",[34] in a postscript from 1106 – into the trivium and quadrivium.[35] Additionally, Kirakos the Grammarian (fifteenth century), writing about his teacher T'ovma Mecop'ec'i, a renowned historian and student of Gregory of Tatev, provides a list of subjects and philosophical treatises studied during his university years:

> all twelve branches of philosophy [the seven liberal arts plus ethics, economics, politics, physics, and theology according to Gregory of Tatev's division] [...], the grammatical art [Dionysius Thrax], Definitions [David the Invincible], Porphyry [Isagoge], the Categories, Peri Hermeneias, On the Cosmos, On Virtues and Vices of Aristotle [the last two pseudo-Aristotelian] [...], 50 sophisticated works [Cappadocians, Philo of Alexandria, Dionysius the Areopagite, etc.], and 51 historical treatises.[36]

This important record clearly demonstrates the order of the university curriculum: the liberal arts, grammar, prolegomena to philosophy, introduction to Aristotelian logic, the works of Aristotle, followed by studies of Neoplatonic works. Notably, the in-depth study of Aristotle was common to both Armenian and European educational systems. The same Aristotelian corpus, along with Porphyry's *Isagoge*, was declared an indispensable part of the syllabus by papal bulls and university statutes from the thirteenth to the mid-fifteenth century; Aristotle "determined the entire study process".[37]

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[34] Classical Armenian: *nerš̌ǰakan arhestk'*, a loanword from the Greek ἐγκύκλιος παιδεία (Khacheryan 1998, p. 222).
[35] Barkhudaryan (2013) p. 4.
[36] Hovsepyan (1914) p. xiii.
[37] Monroe (1907) pp. 144-5.

The second major reform of the curriculum was implemented by John Orotnec'i through the incorporation of Latin works and scholastic Aristotelianism. In the philosophical manuscripts M2382,[38] M1659, and M3902, commissioned by him, we find, among others, the following works clearly used for teaching purposes:[39] commentaries on Aristotle's *Categories* and *Peri Hermeneias*, on the *Isagoge*, on the *Liber de sex principiis* (also the translation of this anonymous twelfth-century logical treatise formerly attributed to Gilbert of Poitiers into Armenian) by Peter of Aragon,[40] as well the treatises *On the Five Universals* and the *Dialectic* by Bartholomew of Bologna.[41] The last work, for example, presents the reader with the development of logical systems from Aristotle and Boethius to Thomas Aquinas and Peter of Spain. These scholastic works, produced in Armenia by foreign authors, can also be confidently regarded as a genuine product of Armenian intellectual reality.[42]

This scholastic influence which originated in Europe and which was propagated by Dominican and Franciscan missionaries, along with their Armenian Uniate followers, significantly deepened and diversified the study of Aristotle in Armenia. The Uniate writings primarily consist of translations, compilations, and excerpts from systematic works across various fields: exegesis, dogmatics, canon law, moral theology, church history, apologetics, sermons, liturgy, and, of particular interest to us, scholastic and Aristotelian philosophy. For instance, in the treatise *On the Hexaemeron* by Bartholomew of Bologna, which Gregory of Tatev copied in 1371 for the university

[38] 'M' stands for the manuscripts from the Matenadaran collection (Institute of Ancient Armenian Manuscripts in Yerevan, Armenia).

[39] La Porta (2015) pp. 283, 289-90. According to a statement by the Uniate Franciscan brother Mekhithar, John Orotnec'i delivered lectures to his students based on the treatises *On the Virtues of the Soul* (an excerpt and adaptation in classical Armenian of Thomas Aquinas' *Summa theologiae*) by John of Swineford and the *Book of Vices* by Peter of Aragon (Oudenrijn 1955, p. 34).

[40] Oudenrijn (1960) pp. 200-1; M3776, M4142, M4147, M4148, M4261 (La Porta 2015, p. 291). The *Liber de sex principiis* can also be found in the statutes (1252) of the University of Paris (Rashdall 1987, p. 441).

[41] Oudenrijn (1960) p. 188.

[42] For the complete list of the Uniate scholastic treatises produced in Armenia, see Aslanyan (2022) pp. 128-9.

library in Tatev,[43] we find quotations from more than ten treatises by Aristotle,[44] some of which would otherwise be unavailable in Armenian. These include the *Nicomachean Ethics*, *Physics*, *Metaphysics*, *On the Heavens*, *History of Animals*, *Topics*, *On Sleep and Waking*, *On Coming-to-Be and Passing-Away*, *On the Soul*, *Meteorology* and the pseudo-Aristotelian *On Plants*.

4. The Persistence of Aristotelian Studies in Renaissance and Modernity

The next question, following this chronology, is: after the Middle Ages and scholastic period, what shifts occurred in the teaching of Aristotelian logic during the Renaissance as it approached modernity? The crisis of the medieval scholastic tradition in Europe did not imply a rejection of ancient logic;[45] it remained in active use throughout the Renaissance and up to the seventeenth century, when the early modern and algebraic logic took over. Similarly, interest in ancient logic persisted in Armenia not only until the fourteenth century, as some researchers suggest,[46] but also much later – reaching the eighteenth century and beyond – as I shall demonstrate in light of newly discovered evidence.

The revival of Aristotelianism in Armenia after the period of decline following the Mongol invasions was a highly challenging endeavour. After a general decline in scholarship during the fifteenth and sixteenth centuries, Aristotelian instruction was restored at the beginning of the seventeenth century through the efforts of some accomplished archimandrites at several monastic islets in Armenia that had survived the wars and devastation of the period. The first figure in this intellectual tradition was Basil of Ałbak (†1615), the head of the Amlordu Monastery. He gathered all the existing works and commentaries on Aristotle in classical Armenian from various regions of Armenia, meticulously studied them, and then began the systematic instruction of his pupils. [47] His disciples Nerses Mocac'i, Melik'set'

[43] M1659 (La Porta 2015, p. 292).
[44] M9478 (Khachikyan 2017, p. 472).
[45] Capozzi and Haaparanta (2023) p. 319.
[46] Marenbon (2023) p. 301.
[47] Chaloyan (1958) p. 91.

Vžanec'i, and Simeon of Ĵuła continued this tradition, teaching in Etchmiadzin and Ĵuła throughout the seventeenth century.[48] The next generation, which included Stephan of Poland and Simeon of Yerevan, achieved even higher levels of Aristotelian scholarship. Among Stephan of Poland's remarkable accomplishments, in addition to his masterful Aristotelian and Neoplatonic commentaries, was the translation of Aristotle's *Metaphysics* into Armenian.[49] This first Armenian translation of the *Metaphysics* from Latin, completed before 1675, was the fourth language into which the original Aristotelian treatise had ever been translated, following Latin, Arabic and Italian,[50] and symbolizes the enduring interest in Aristotle in the Armenian intellectual circles during the early modern era, as clearly demonstrated by the printed and manuscript collections of that period.

5. Evidence of Manuscript and Printed Collections

When examining Aristotle's reception in the Armenian tradition, I should naturally consider the works of Aristotle himself, as well as all the commentaries and treatises on Aristotle produced by both Armenian and non-Armenian classical authors that have become part of the Armenian written heritage. The handbooks of Aristotelian logic compiled and circulated within Armenian circles are also essential to this study.

The influence of Aristotelian works on the Armenian tradition is particularly evident in the manuscript heritage. Even a brief survey of the Armenian manuscript collections worldwide, along with the bibliography of related publications, reveals the undeniable prominence of Aristotelian studies and their educational significance in Armenia.[51] To illustrate this, I

[48] Mirzoyan (2017) pp. 138-9.
[49] These are primarily presented in the Matenadaran collection, for example, manuscripts M5249, M10032 (AD 1675), which also contain Stephan's commentary in the margins, as well as M10868, which includes a separately written commentary.
[50] Apart from the unpublished seventeenth-century Italian version by Bartolomeo Beverini, the first translations into other European languages, such as English, German, French, and Russian, appeared only in the 19th century.
[51] Alishan (1893) pp. 384-5; Oudenrijn (1955) pp. 26-8; Oudenrijn (1960) p. 126; Ashjian (1994) pp. 50-1; La Porta (2001) pp. 20-3; Khachikyan (2017) pp. 468-9.

will provide a brief analysis of two essential collections of Armenian manuscripts: one from the Matenadaran Institute of Ancient Armenian Manuscripts in Yerevan, and the other from the University Library of Tübingen. The former is the largest collection of its kind, offering a comprehensive overview of the Armenian reception of Aristotle, while the latter is notable on account of its unique acquisition history.[52]

In the Matenadaran collection alone, I have identified approximately 300 manuscripts containing Aristotle's works, 247 manuscripts of David's commentaries on Aristotle, and 183 manuscripts of Porphyry's *Isagoge* (excluding the commentaries in Armenian). Additionally, around 160 manuscripts contain commentaries by medieval Armenian thinkers on Aristotle, Porphyry, and David. Even these approximate figures indicate that Aristotelian works constitute the largest philosophical segment of existing Armenian manuscript collections, far surpassing, for example, the most popular Neoplatonist in the Armenian tradition, Pseudo-Dionysius the Areopagite.[53] In order to make this quantitative dimension more explicit and meaningful, and to show that Aristotelian works served as an indispensable foundation for Neoplatonic commentary and had a significant impact on the sciences in medieval Armenia, it is necessary to provide a couple of examples here. One case to consider is the incomplete scholia by John Orotnec'i on Pseudo-Dionysius' *Divine Names*, which has survived in a single extant manuscript.[54] Orotnec'i interprets the treatise solely in the light of the principles from Aristotle's *Categories* and *Posterior Analytics*, distinguishing between eponymous, homonymous names and epithets, discussing the name as a definition of the nature, focusing on humans as name givers, as well as following the scholastic interpretation of Albert the Great, who classified the art of proclaiming divine names (*Ars nominandi deum*) according to the theory of

[52] The Tübingen collection of Armenian manuscripts (classified as *Ma XIII*), comprising a substantial number of 105 units, is a notable example of a collection acquired through a single purchase (from Constantinople in the early 1900s). It clearly demonstrates the significant presence of Aristotle in a random private collection. For further details, see Finck and Gjandschezian (1907) pp. iii-vi.

[53] Aslanyan (2022) pp. 14-5.

[54] M2121, 331^{r}-334^{r} (AD 1726), deciphered from classical Armenian and integrated into my monograph; see Aslanyan (2022) pp. 189-96.

science in the *Posterior Analytics*.[55] Furthermore, a notable example from the medical field can be drawn from the statement in the preface of the twelfth-century treatise *Relief of Fevers* by the renowned Armenian physician Mxit'ar Herac'i: "since the learned physicians first took the five predicables from Porphyry's Isagoge on Aristotle and established them as the foundation and merit of the medical art".[56] These examples clearly demonstrate the paradigmatic role of Aristotle, whose ideas served as a cornerstone for almost every treatise in the fields of philosophy and science.

Regarding the character of the Aristotelian manuscript collections in Armenia, certain patterns in manuscript allocation can be observed. First, the previously mentioned manuscripts primarily represent *spicilegia* – collections specifically designed for educational purposes – copied at monastic schools and late medieval universities. For example, the precious *spicilegium* of Mxit'ar Ayrivanec'i from the Gełard Monastery, dating to 1283, consists of nearly 1,200 folia and contains, among other philosophical and theological works, Porphyry's *Isagoge* and David's commentary on the Isagoge, as well as the Davidic translations and commentaries on Aristotle's *Categories* and *Peri Hermeneias*, arranged in a specific order. It is also noteworthy that the Aristotelian corpus was often placed in these codices immediately after grammatical works, where logic was traditionally included in the curriculum.[57] *Spicilegia* composed solely of Aristotelian content, enriched with scholastic works, were also produced by Dominican Uniate scholars. For instance, manuscript M1646, dating to the mid-fourteenth century, contains Porphyry's *Isagoge*, Aristotle's *Categories* and *Peri Hermeneias*, combined with the commentaries of Peter of Aragon and the treatise *Liber de sex principiis*, in which he presents his interpretation of Aristotelian metaphysics. Some manuscripts (e.g., M926, 191^{r}-286^{v}) include extensive citations from Aristotle under the title "Words of Aristotle", which were again selected for educational purposes. Another point to mention is that since the seventeenth century, these manuscripts have been produced not only in Armenia but also in various educational centres of the Armenian diaspora, such as

[55] See also Weismantel (2010).
[56] M416 (AD 1279), 5^{r}, (my transl.).
[57] M2359, M2361, M2364, M2368, M3029, etc.

Lviv (M1916, 1633), Stanisławów (M1966, 1727), St. Petersburg (M3355, 1740), and Venice (Mekhitarist collection).

Furthermore, the Aristotelian corpus is prominently represented also in the Tübingen collection. The manuscript MA XIII 74 (1557) contains an extensive set of Aristotelian treatises, including the first logico-philosophical chapter of St John Damascene's *The Fount of Knowledge* (which primarily addresses Aristotle's *Categories*), commentaries on Aristotle's *Categories* and *Peri Hermeneias*, the text and commentary on the pseudo-Aristotelian treatises *On the Cosmos* and *On Virtues and Vices*, as well as commentaries on Porphyry's *Isagoge* and David's commentary on the *Isagoge*.[58] In Ma XIII 76 (1679), one of the earliest copies of the complete Armenian translation of Aristotle's *Metaphysics* by Stephan of Poland is preserved.[59] Notably, the Tübingen collection includes three logical treatises by Armenian authors and Armenologists from the seventeenth to the nineteenth century: a nine-chapter compilation on Aristotle's *Physics* by the Italian Armenologist Clemente Galano (Ma XIII 79, 1^{r}-12^{v}, seventeenth century), a commentary on Aristotle's *Analytics* by Petros Ałamalean Bert'umeanc', which extensively utilizes David's commentary on this work (Ma XIII 77, 1^{r}-85^{v}, 1771), and a two-part handbook of theoretical philosophy and logic by Joseph of Arc'ax, heavily based on Porphyry (Ma XIII 78, 1^{r}-97^{v}, 1816). These findings at the Tübingen University Library demonstrate that Armenian Aristotelian treatises, compiled specifically for pedagogical purposes, were copied and disseminated much more rapidly than in medieval times, circulating from distant regions of Armenia through Istanbul and eventually reaching Tübingen.

In the modern era, we also witness an increasing number of new publications, including handbooks of logic, translations, and commentaries on Aristotle, printed in Constantinople, Venice, St Petersburg, Tbilisi, and other cultural centres of the Armenian diaspora. One of the most significant works is the *Handbook of Logic* by Simeon of Ĵuła, composed at the beginning of the seventeenth century and published twice – in 1728 and 1794 – was even translated into Georgian. It covers almost the entire content of the *Organon* and remained the most popular logic textbook in Armenian

[58] Ma XIII 74, 2^{r}-35^{v}, 45^{r}-204^{v}, 208^{r}-216^{r} (Finck and Gjandschezian 1907, pp. 111-3).
[59] Ma XIII 76, 95^{r}-325^{r}.

schools until the end of the nineteenth century.[60] His disciple, John Mrk'uz of Ĵuła, authored his own treatise entitled *Short Logic*, which was printed during his lifetime in Amsterdam in 1711 and also served as a school handbook. Stephan Rošk'a, the Armenian Catholic Bishop of Poland, wrote a monumental two-part work on philosophy, entitled *Philosophy or Introduction to Aristotelian Logic* (Stanisławów, 1727), which was widely used as a logic handbook in Armenian circles.[61] It is also worth mentioning a scholastic work in three volumes (1666) by the logician Antoine Goudin, which offers a synthesis of the principles of Aristotelian logic, physics, morality, and metaphysics. This work was translated into Armenian in 1737 by the Armenian archimandrite Luke of Xarberd and printed in Venice by the Mekhitarist Fathers (1750-1751). Goudin's work had a significant influence on Armenian authors of the eighteenth and nineteenth centuries, such as Joseph of Arc'ax, who published his own handbook of logic in 1840, heavily based on excerpts from Goudin's edition.[62]

6. The End of Neoplatonic Instruction and the Persistence of Aristotelian Tradition in Armenia

To conclude the historical progression and the long chain of transformations described in this article, the Neoplatonic instructional system, deeply rooted in the Armenian world for around one and a half millennia, was abandoned by the end of the nineteenth century, due to the permeation of the new ideological currents from Europe and the modernization of the educational system. In the twentieth century, Soviet philosophy emerged with a harsh critique of Aristotle's political and ideological views,

[60] Mirzoyan (2017) pp. 139-40.
[61] M1966 (Mnacakanian 2017, pp. 33-4).
[62] In my opinion, the *Liber de causis*, largely drawn from Proclus, should also be added to this list. Although falsely attributed to Aristotle during the Middle Ages, it was still regarded at the time as an Aristotelian treatise. This work is widespread in Armenian manuscript collections and has consistently been used for teaching purposes, especially following the emergence of a new translation from Latin by Stephan of Poland in 1660 (first printed in 1750, Constantinople).

particularly his support of monarchy, aristocracy, and the slave state. Scholasticism was regarded as a flawed version of Aristotelianism, with ethics interpreted through the lens of class struggle and the moral norms of socialist society. Notably, the article on Aristotle in the Great Soviet Encyclopedia is filled with critical references from Friedrich Engels and Karl Marx.[63] Despite the dominance of Marxist teachings in Armenia, scholarship on Aristotelian logic and commentaries was preserved through the legacy of the Neoplatonist David, who holds great significance in the Armenian tradition, and through the efforts of dedicated Soviet-era Armenian scholars such as Chaloyan, Arevshatyan, and Mirzoyan. Thanks to this continuity, Aristotle continues to play a prominent role in the Armenian university curriculum, becoming an indispensable part of courses on logic, history of philosophy, ethics, philosophy of language, hermeneutics, and more. Aristotle studies today certainly have even greater potential for popularization beyond academic circles, supported by new translations of Aristotle into modern Eastern Armenian, which are already appearing,[64] as well as by ongoing research into the vast heritage of Aristotle's Armenian reception, with many treasures still awaiting scholarly study.

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[63] Great Soviet Encyclopedia (1970), 3rd ed., A. Prochorov (Editor in Chief), II, pp. 195-6.

[64] The first critical translation of Aristotle's *Poetics* was published in 2025 (trans. by G. Muradyan and A. Topchyan).

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THE DISCOVERY OF A NEW WITNESS TO WILLIAM OF MOERBEKE'S TRANSLATION OF ARISTOTLE'S *DE ANIMALIBUS* IN VERCELLI, MUSEO LEONE

Abstract

A hitherto neglected manuscript preserved in the Biblioteca del Museo Camillo Leone (Vercelli) contains William of Moerbeke's translations of *De animalibus*, i.e., the Latin collection of Aristotle's *Historia animalium*, *De partibus animalium* and *De generatione animalium*. Two colophons deserve particular attention. The first records the completion of the *Historia animalium* on 21 November 1260, a date previously unknown; the second confirms the already attested completion date of *De partibus animalium* (23 December 1260). This discovery prompted a closer examination of the manuscript, focusing on the text of the *Historia animalium*. The results suggest not only that the newly attested date deserves to be taken into account in reconstructing the chronology of Moerbeke's translation, but also that the manuscript preserves an exceptionally valuable textual witness for the final chapters of Book X. The manuscript thus provides new evidence both for the chronology of Moerbeke's translation and for the textual reconstruction of its concluding section.

Keywords

William of Moerbeke, Aristotle *De animalibus*, *Historia animalium* X, *Aristoteles Latinus*, Museo Leone (Vercelli)

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Introduction

MS Vercelli, Biblioteca del Museo Camillo Leone, F5 (henceforth: Vc), preserving William of Moerbeke's (d. before 26 October 1286) translations of Aristotle's *Historia animalium*, *De partibus animalium*, and *De generatione animalium,* has never been examined as a textual witness to these translations. The present article offers the first study that considers together the textual evidence preserved by the manuscript and the two dated colophons accompanying the translations.[1]

On f. 121rb there is a colophon to the text of *De partibus animalium* that mentions 23 December 1260 as the date of completion of the translation, together with the geographical indication "Thebis", two elements previously known only from one witness of the translation: MS Firenze, Biblioteca Medicea Laurenziana, Leopold. Med. Fesul. 168.[2] Even more remarkable is that, on f. 89ra, the colophon to the translation of the *Historia animalium* dates the completion of the work to 21 November 1260.[3] Since this colophon, and the date reported in it, are absent in all other known witnesses of the translation, we were prompted to examine the codex – and, in particular, the part of it containing the translation of the *Historia animalium*.

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[1] The colophons have been recently signaled the one by Gavinelli (2007) pp. 609-10, the other by Rossi (2025) p. 57. Nonetheless, their relevance for reconstructing the chronology of Moerbeke's translations has not yet been recognized. We are grateful to Riccardo Rossi (Museo Leone, Vercelli) and Elvira Di Marino (Università del Piemonte Orientale) for bringing this manuscript to our attention and inviting us to explore its significance.

[2] Vc, f. 121rb: "Explicit completa anno domini MCCLX decimo kalendas ianuarii. Thebis". Compare the colophon to the translation in MS Firenze, Biblioteca Medicea Laurenziana, Leopold. Med. Fesul. 168, f. 65v: "Explicit completa anno Domini 1260 X° kalendas Januarii Thebis. De Partibus Animalium liber explicit" (quoted from Rossi 1989, pp. 222-3; on the interpretation of this colophon, see *ibid*., p. 223 n. 8; Bossier 1989, p. 289 n. 29, and Vanhamel 1989, pp. 332-3). The same date is also mentioned in the colophon to Moerbeke's translation of *De generatione animalium* in MS Cesena, Biblioteca Malatestiana, Plut. S.VII.3, f. 166v: "Explicit liber de animalibus Aristotelis, cuius greca [?] translacio completa est anno gracie 1260. decima kalendas. januarij. tebis" (quoted from Drossaart Lulofs 1966, p. XXII). However, given that, as remarked by Drossaart Lulofs, only the words "Explicit liber de animalibus" have been written by the copyist, this colophon has been disregarded in the debate concerning the dating of Moerbeke's translations of Aristotle's zoological treatises. Cf. *ibid*., pp. XXII-XXIII.

[3] Vc, f. 89ra: "Explicit completa anno domini MCCLX XI kalendas decembris".

Our examination suggests that the importance of the manuscript is not confined to the dating of Moerbeke's translation. As we shall point out, the manuscript is likely to preserve the best available text for the treatise *De sterilitate*, i.e., *Historia animalium*, Book X, 5-7.

The article is structured as follows. In the following section, we briefly present some codicological and paleographical features of Vc. Next, we review the conclusions reached by the editors of Moerbeke's translation of the *Historia animalium* concerning the manuscript tradition of the work, and we discuss some aspects of the relationship of Vc to this tradition. These aspects show that Vc holds particular value for the reconstruction of the transmission of Moerbeke's translation. Afterwards, we present a selection of the textual evidence we have gathered so far to support this conclusion. Then, based on these considerations, we conclude by discussing the potential implications of the discovery of Vc both for the dating of Moerbeke's translation of the *Historia animalium* and for the constitution of the text itself.

1. The Manuscript

Vc is a parchment manuscript (mm 243x170) with an early 20th-century binding containing 162 folios, presumably dating to the very late 13th century or to the 14th century, written in two columns in *littera textualis* by what appears to be a single hand. The manuscript contains William of Moerbeke's translation of the three main Aristotelian zoological treatises, which circulated in the Middle Ages under the title *De animalibus*:[4] *Historia animalium* (ff. 3ra-89ra), *De partibus animalium* (ff. 89rb-121rb), and *De generatione animalium* (ff. 121va-161rb), interspersed with mostly limited marginal and interlinear glosses, some of them by the same hand that copied the text and in the same ink.[5]

[4] Note that the title "De animalibus" is used explicitly in the manuscript, on f. 3r ("Liber I de animalibus Aristotelis"), and that the books of the three zoological treatises are numbered continuously. At the same time, the title "de ystoriis" has been written in the upper right corner of the recto of each folio, from f. 6r to f. 88r.

[5] For more codicological and paleographical information, see the full catalogue record of the manuscript by Rossi (2022) available at the following link: https://manus.iccu.sbn.it/cnmd/0000311376. However, note that, in the record, the two chronolog-

2. The Tradition of Moerbeke's Translation of the Historia animalium and Some Remarks on Vc's Relationship to It

For the purposes of this article, we have focused only on the text of the *Historia animalium* contained in ff. 3ra-89ra of the manuscript, leaving aside the folios containing *De partibus animalium* and *De generatione animalium*.

Regarding the text in Vc, it is necessary, first of all, to consider the conclusions reached by the editors of Moerbeke's translation of the *Historia animalium* for the *Aristoteles Latinus*, Pieter Beullens and Fernand Bossier, concerning the manuscript tradition of the treatise.[6]

In addition to Vc, there are 38 known witnesses of Moerbeke's translation of the *Historia animalium*, to which should be added five more containing fragments of the text. According to the editors, the manuscript tradition of Moerbeke's translation is divided into two branches. One branch consists solely of MS Toledo, Archivo y Biblioteca Capitulares, 47.10 (henceforth: Tz, following the sigla adopted by the editors),[7] whereas all the other 37 witnesses considered by the editors make up the second branch. Both branches appear to stem from an archetype that was not William of Moerbeke's autograph: Tz directly from the archetype and the other witnesses through the mediation of a sub-archetype that the editors call 'a' (henceforth, in what follows we refer to this branch of the tradition as the 'a-tradition'). While the transmission of the translation of Book X of the *Historia animalium* has some peculiarities that distinguish it from the transmission of the translation of the first nine books, it is safe to say that the same considerations apply to the manuscript tradition of the translation of Book X as well.

As the editors clearly demonstrated, on most occasions Tz contains a text that is superior to that of the other branch of the tradition. Apart from frequently preserving better and more accurate renderings of the Greek, Tz also

ical indications of 21 November 1260 and 23 December 1260 are treated as dates of completion of the copies themselves, not of the works being copied. The record also includes and discusses all the known information concerning the provenance of the manuscript.

[6] Cf. Beullens and Bossier (2000) pp. XXV-LXII, and Beullens and Bossier (2020), pp. XXVI-XXXIV. See also the important remarks in Rossi (2004) pp. 598-608.

[7] We have not been able to examine the manuscript directly; therefore, all our information on the text of the *Historia animalium* in Tz is taken from Beullens and Bossier (2000) and Beullens and Bossier (2020).

includes, to a significantly greater extent than the witnesses belonging to the other branch of the tradition, several features that appear to derive from the autograph. These elements have made Tz the fundamental point of reference for the editors in the constitution of the text of Moerbeke's translation.

Our examination suggests that Vc does not belong to the a-tradition, giving it special relevance as a textual witness of the translation, especially for the *Historia animalium* X, 5-7, which is missing in Tz.[8] A selection of the evidence we have gathered so far is presented in the next section. A common overall feature that Vc shares with Tz deserves particular attention. Like Tz, Vc carefully preserves numerous blank spaces corresponding to Greek words for which no Latin equivalent was supplied in the translation. These spaces are transmitted with remarkable consistency and appear to reflect a characteristic feature of Moerbeke's working method: he used to leave a blank space in the autograph indicating Greek word(s) that he was unsure how to translate, writing the corresponding Greek word(s) in the margin.[9] By contrast, the a-tradition does not transmit these blank spaces.[10]

3. Textual Evidence

In order to assess the relationship between Vc and the a-tradition, in what follows we focus on some of the distinctive readings and additional features that have been used to distinguish Tz from the a-tradition in the "Introduction" to the two volumes of the *Aristoteles Latinus* edition of Moerbeke's translation of the *Historia animalium*.[11] As we shall show, significantly, in

[8] Tz breaks off at 637a18. The last words of the text are: "organis adducunt aut".

[9] On this feature of Moerbeke's working method, see now Beullens (2022) pp. 90-2. For the case of the *Historia animalium*, see Beullens and Bossier (2000) p. XII and pp. XXVIII-XXX, and Beullens and Bossier (2020) pp. XXX-XXXI.

[10] As the editors remark: "The preservation of the lacunae in *Tz* thus proves its separate position and its high quality" (Beullens and Bossier 2000, p. XXX). And, again, with specific reference to the text of Book X: "The blank spaces in *Tz* where Greek text is clearly missing form supplementary evidence for its superior quality. The other manuscripts ignore the lacunae, even if the omissions completely distort the text to the point of leaving it incomprehensible" (Beullens and Bossier 2020, p. XXX). To the extent that Vc shares this feature of Tz, it seems legitimate to apply these considerations to it as well.

[11] Cf. Beullens and Bossier (2000) pp. XXV-XXXI, and Beullens and Bossier (2020) pp. XXIX-XXXII. For the Greek text of the *Historia animalium*, we have used the edition by

almost all of the cases we discuss, Vc has the same readings and preserves the same additional features as Tz. We focus first on Books I-IX, and then on Book X. Of course, the relationship between Vc and the a-tradition (and, *a fortiori*, that between Vc and Tz) requires further investigation.

3.1 Books I-IX

Regarding the text of Books I-IX of the *Historia animalium*, the hypothesis that Vc does not belong to the a-tradition is supported by the following evidence.

First and foremost, in a number of cases where Tz has a distinctive reading compared to the a-tradition (a reading that is also a more accurate rendering of the Greek), Vc has the same reading as Tz. They are the following ones:[12]

- At 488a34, corresponding to τὰ δ' ἄνῳδα, Vc (f. 4rb) has the reading "hec autem non cantativa",[13] which is present in Tz and absent in the a-tradition.

- At 489a7, corresponding to γάρ, Vc (f. 4vb) has "enim", which is also the reading adopted by Tz, whereas the a-tradition has "autem".

- At 493b19, corresponding to σχεδόν, Vc (f. 7vb) has the reading "fere", which is also adopted by Tz, whereas the a-tradition has "sunt".

- At 494b6, corresponding to κινητικώτερον, Vc (f. 8rb) has the reading "mobilior", which is also adopted by Tz, whereas the a-tradition has "mollior".

- At 496a9, corresponding to πᾶσι, Vc (f. 9rb) has the reading "omnibus", which is also adopted by Tz, whereas the a-tradition has "omnium".

- At 496b7, corresponding to μόνον, Vc (f. 9va) has the reading "solum", which is also adopted by Tz, whereas the a-tradition has "suum".

- At 497b17, corresponding to ἀνοιχθείς, Vc (f. 10rb) has the reading "apertus", which is also adopted by Tz, whereas the a-tradition has "apertius".

- At 501b33-502a1, corresponding to ἐξ ἐναντίας, Vc (f. 13ra) has the reading "ex opposito", which is also adopted by Tz, whereas the a-tradition has "expositos".

Balme (2002). Concerning the debate on the authenticity of Book X, as well as for the relevant literature, see van der Eijk (1999).

[12] However, note that, as the editors remark, in some of the cases in the list that follows "the reading of *Tz* is also found in one or more of the other manuscripts in the form of a variant or a correction, [...]" (Beullens and Bossier 2000, p. XXVI n. 55).

[13] The copyist first wrote "cantiativa" and then corrected it to "cantativa".

- At 519b8, corresponding to ἀπίμελον, Vc (f. 23rb) has the reading "sine sagimine", which is also adopted by Tz, whereas the a-tradition has "sine sanguine".

- At 531a2, corresponding to πάμπαν, Vc (f. 29vb) has the reading "omnino", which is also adopted by Tz, whereas the a-tradition has "omnia".

- At 547a5, corresponding to Σίγειον, Vc (f. 38va) has the reading "Sigium", which is also adopted by Tz, whereas the a-tradition has "Signum".

In other cases where Tz has a reading different from – and superior to – that of the a-tradition, the reading of Vc is not the same as that of Tz. Even in these cases, however, the reading of Vc does not match the reading in the a-tradition. For instance, at 493a28, corresponding to συμφύεται, Tz has the reading "connascitur", whereas the a-tradition has the reading "commiscetur". In this case, Vc has the reading "cognoscitur" (f. 7va). Again, at 531a26, corresponding to μικρόν τι, Tz has the reading "modicum quid", whereas the a-tradition has "medium quidem". In this case, Vc has the reading "modicum quidem" (f. 29vb).

Secondly, Vc also presents, in the margins, some translations of terms that were initially only transliterated in the main text. These translations are omitted in the a-tradition, but are present in Tz. Consider the following two cases:

- One particularly significant case occurs at 506a17, where not only the translation, but also the transliteration in the main text are missing in the a-tradition, but are present in Tz. Indeed, Tz has the reading "egocephalus" (transliteration of ἀιγοκέφαλος), which is accompanied, in the margin, by the suggested translation "quasi caprini capitis". In the same way, in Vc, on f. 15va, the text reads "egocefalus" and in the left margin is the suggested translation "quasi caprini capitis".

- At 530a6, corresponding to "in strombis" (transliteration of ἐν τοῖς στρόμβοις), Vc has the marginal note "id est in tornatis" (f. 29rb), as does Tz; but this note is absent in the a-tradition.

Thirdly, Vc contains many explanatory marginal notes concerning the meaning of specific terms that, according to the editors, were also likely present in the autograph. Some of them – at least the following ones – are present in Tz but absent in the a-tradition:

- At 552a15: "agrostea est nympha montana" (Vc, f. 41va).
- At 553b20: "est pestilentia aeris respectu fructuum" (Vc, f. 42rb).

Fourthly, in a case where, in the a-tradition, "[t]he text has undergone accidental transpositions of one or more words that have altered it significantly",[14] Vc has the correct text, in which no transpositions have occurred (again, as in Tz). In particular, at 506a19, "*emis fryna* is omitted from the enumeration and displaced after the first occurrence of *habent* (506a21) in all manuscripts except for *Tz*, thus rendering the text incomprehensible".[15] Vc, like Tz, has "emis fryna" in its correct place in the enumeration (f. 15vb).

Fifthly, Vc (again, just like Tz) preserves a more faithful rendering of the Greek text in several cases where, in the a-tradition, "some sentences have been completed or corrected":[16]

- At 496b25, corresponding to ἐν τοῖς ἱερείοις, "in sacris" is changed into "in multis sacris" in the a-tradition but not in Tz. Vc, like Tz, has the reading "in sacris" (f. 9vb).

- At 512a17, "the correct singular genitive *pedis*, which modifies the untranslated τὸν ταρσόν (blank in *Tz*, but omitted in the other manuscripts), is changed into the plural accusative *pedes*, probably to match the preceding *ad*",[17] in the a-tradition but not in Tz. Vc, like Tz, has the reading "pedis" (f. 19rb).

- At 544a9, in the a-tradition, unlike Tz, "to the translation *albe* for λεύκης ("white poplar") that was misunderstood, the explicatory remark *vitis* is added".[18] Vc, like Tz, has the reading "albe", without *vitis* (f. 37ra).

[14] Beullens and Bossier (2000) p. XXX.
[15] *Ibid.*
[16] *Ibid.*
[17] *Ibid.*
[18] *Ibid.*, p. XXXI.

Finally, but no less importantly, Vc preserves a significant number of blank spaces in the text of the translation. As already mentioned, these blank spaces are normally the result of a peculiar feature of Moerbeke's translation method. Tz, unlike the a-tradition, has a significant number of these blank spaces, sometimes accompanied by the indication "Gr" ("Grecus") in the margin referring to them. Although, in the case of the translation of the *Historia animalium*, there are a far higher number of such blank spaces in the text of Book X, some are also present in the first nine books. Many of these blank spaces are also present in Vc.[19] Here are a few relevant instances of such blank spaces:

- At 491a2, καὶ γίννῳ καὶ ἴννῳ is left untranslated and, in Tz, these words correspond to a blank space in the main text. In this case, the a-tradition has an attempted transliteration of the Greek characters that Moerbeke had supposedly written in the margin corresponding to the blank space in the main text, resulting in the reading "et rippa et ippa".[20] By contrast, Vc (f. 6ra) has a blank space, precisely like Tz. Moreover, as in Tz, in this case, the indication "Gr" in the margin is absent.

- At 512a17, τὸν ταρσόν is left untranslated and, in Tz, these words correspond to a blank space in the main text, accompanied, in the margin, by the indication "Gr". The same situation is found in Vc (f. 19rb): the words, left untranslated, correspond to a blank space accompanied by the indication "GR" (in capitals) in the margin. No blank space is present in the a-tradition, where, however, as mentioned above, the genitive singular *pedis* that immediately follows the untranslated words has been changed into the accusative plural *pedes* in agreement with the preposition *ad* that

[19] The significantly higher number of Greek terms left untranslated in Book X compared to the previous books seems to have been explicitly noted by the copyist of Vc. A note in the lower margin of f. 85vb, which refers to the incipit of Book X, and which appears to be not only by the same hand that copied the text but also in the same ink, reads as follows: "Iste decimus tractatus non est correctus multum habens de greco". After these words, a different hand has added: "tamen sic repertus est in aliis libris".

[20] The only exception is MS Montpellier, Bibliothèque interuniversitaire, Section Médecine, H 44 ('Js' in the apparatus of the edition) where, instead, in the margin, there is the variant reading "al(ias) et gino et ynno", which the editors explain by suggesting that the copyist of this manuscript was able to consult an antigraph that preserved features not present in the archetype of the tradition of Moerbeke's translation (identified as 'x' in the *stemma codicum*). Cf. Beullens and Bossier (2000) pp. LVII-LXII.

immediately precedes the untranslated words. As mentioned, the genitive *pedis* is retained in both Tz and Vc.

- At 539b22, πυγηδόν is left untranslated and, in Tz, these words correspond to a blank space in the main text, accompanied, in the margin, by the indication "Gr". The same blank space is found in Vc (f. 34va), but "Gr" does not appear in the margin. The blank space is absent in the a-tradition.

- At 550b4, κύτος is left untranslated and, in Tz, the word corresponds to a blank space in the main text, whereas the a-tradition has a transliteration of the Greek characters, "kyrot". Vc (f. 40va), like Tz, has a blank space, and, again like Tz, "Gr" does not appear in the margin.

- At 559a9-10, after εἰς τὰ στελέχη, translated as "in stipites", Tz inserts a blank space, which is also found in Vc (f. 44vb), with "GR" in the margin (which, in this case, is not found in Tz). The blank space is absent in the a-tradition.

All the blank spaces in the text of the first nine books of the *Historia animalium* in Vc also appear in Tz. And, based on our first examination, the situation seems to be largely similar for Book X as well.

3.2 Book X

The same situation is confirmed regarding Book X. In 14 out of the 15 cases pointed out by the editors where, in the first chapter of the book, Tz has a distinctive (and better) reading compared to the a-tradition, Vc has the same reading as Tz:[21]

- At 633b13, corresponding to μέν, Vc, like Tz, has the reading "quidem" (f. 85vb), which is omitted in the a-tradition.

- At 633b24, corresponding to ἀπεργαζομένη, Vc, like Tz, has the reading "operans" (f. 85vb), whereas the a-tradition has "operetur".

- At 633b29, corresponding to εἰ φῦμά τι ὄν, Vc, like Tz, has the reading "si pustula" (a translation of εἰ φυμάτιον) (f. 85vb), which is omitted by the a-tradition.

[21] Note, however, that the editors in this case added the caveat that "minor or individual variants [within the a-tradition] are not considered" (Beullens and Bossier 2020, p. XXX n. 44). The only case in which one such variant is mentioned in the apparatus has been pointed out below, in n. 23.

- At 634a2, corresponding to ἐν ἄλλῳ, Vc, like Tz, has the reading "in alio" (f. 85vb), which is omitted by the a-tradition.

- At 634a10, corresponding to καί, Vc, like Tz, has the reading "et" (f. 86ra), which is omitted by the a-tradition.

- At 634a13-14, corresponding to ὑγιαίνοντος, Vc, like Tz, has the reading "sano" (f. 86ra), whereas the a-tradition has "sanato".

- At 634a22, corresponding to the first καί, Vc, like Tz, has the reading "et" (f. 86ra), which is omitted by the a-tradition.

- At 634a32, corresponding to ταῖς [...] πλείσταις, Vc, like Tz, has the reading "plurimis" (f. 86ra), whereas the a-tradition has "pluribus".

- At 634a34, corresponding to δέονται, Vc, like Tz, has the reading "indigent" (f. 86ra), whereas the a-tradition has "indigere".

- At 634b1, corresponding to προσεξαμαρτάνῃ, Vc, like Tz, has the reading "adpeccet" (f. 86rb), whereas the a-tradition has "appetant".[22]

- At 634b1, corresponding to αὕτη, Vc, like Tz, has the reading "ipsi" (a translation of αὐτῇ) (f. 86rb), which is omitted by the a-tradition.

- At 634b3, corresponding to δὲ, Vc, like Tz, has the reading "autem" (f. 86rb), which is omitted by the a-tradition.[23]

- At 634b4, corresponding to δεῖ, Vc, like Tz, has the reading "oportet" (f. 86rb), whereas the a-tradition has "operiri".

- Finally, at 634b6, corresponding to ποιῶσιν, Vc, like Tz, has the reading "faciant" (f. 86rb), whereas the a-tradition has "faciunt".

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[22] Nevertheless, the reading "appetant" has been added by another hand in a marginal note referring to "adpeccet", that reads "al. appetant" (Vc, f. 86rb). This is not an isolated case: similar marginal notes, quite likely by the same hand, appear at other places of Book X as well. For instance, a note at 634b4, referring to "consequi" (which translates ἀκολουθεῖν), reads "al. obsequi" (Vc, f. 86rb). In this case, however, "consequi" is the reading adopted in both branches of the tradition. A case closer to that of 634b1 is, instead, found at 635a1-3. Here, Tz has a line of the translation that is missing from the a-tradition: while Tz reads "propter predictam causam, quantum attrahere non utique poterunt sperma. Si quidem igitur fortiter natura sic habeant ab infirmitate, incurabilis passio", the reading adopted in the a-tradition omits all the words between "causam" and "habeant". Vc, like Tz, has the full line. Nonetheless, a marginal note referring to this passage, apparently by the same hand that added the other two notes just mentioned, reads: "al. post predictam sic habeant aut ab infirmitate incurabilis passio" (Vc, f. 86va), thus omitting the same words that are missing from the reading preserved in the a-tradition.

[23] Save for MS Erfurt, Universitätsbibliothek, Dep. Erf., CA, Fol. 28 ('Dn' in the apparatus of the edition), which has the reading "quidem".

A case that deserves a separate discussion is 634a30-31. The a-tradition, unlike Tz, omits a line due to homoioteleuton. The line, as it reads in Tz, is "notari habentis ut non oportet, sanis autem alba procedunt". The Greek text at this point reads: ἐπισημαίνειν ἐχούσης ὡς οὐ δεῖ. ταῖς δ' ὑγιαινούσαις τὰ λευκὰ καὶ σεσημμένα προέρχεται. In Tz, καὶ σεσημμένα is not translated, and a blank space is left in the manuscript for these words. Vc, like Tz, preserves the translation of this passage (without "autem"); however, in Vc καὶ σεσημμένα has been translated, and the full passage reads: "notari habentis ut non oportet, sanis alba et putrefacta procedunt" (Vc, f. 86ra). Remarkably, at this point of the text, Vc seems to preserve a reading superior to that of Tz.

Other important cases to consider are those in which both the reading of Tz and that in the a-tradition could have been variants present in the autograph as alternative translations of the same word. The editors mention two such cases. In both, again, Vc has the same reading as Tz against that in the a-tradition:

- At 633b20, οἷον is rendered as "veluti" in Tz and as "puta" in the a-tradition. Vc has "veluti" (f. 85vb), just like Tz.
- At 635b22, τὰ λαμπρότερα is rendered as "fulgentiora" in Tz and as "fulgidiora" in the a-tradition. Vc has "fulgentiora" (f. 87ra), just like Tz.

A final significant case is καθίστασθαι at 634a40. Here Tz preserves two variants for the translation of this verb, "consistit desistit". By contrast, the a-tradition features the conjunction "et" between the two verbs, so that the reading of this passage is "consistit et desistit". Even in this case Vc has the same reading as Tz, "consistit desistit" (f. 86rb), with a graphic sign between the two verbs.

4. The Wider Implications of the Discovery of Vc

The wider implications of the discovery of Vc, especially if its independence from the a-tradition were confirmed, are numerous.

First of all, given that the colophon of the *Historia animalium* contained in Vc was already evidently in the antigraph, such a colophon pre-

serves information transmitted from an earlier stage of the manuscript tradition. The question therefore is how far back in the tradition it may ultimately go. In this respect, it is striking that the colophon of *De partibus animalium* contained in Vc confirms a date already accepted by scholarship, whereas the one of the *Historia animalium* preserves a previously unknown date. The combination suggests that both deserve to be examined together rather than in isolation.

The date of 21 November 1260 differs from the chronology usually assigned to the translation of the *Historia animalium*, generally dated, mostly on stylometric grounds, to around 1262-1263 (perhaps slightly earlier for Book X).[24] If the chronological indication found in Vc ultimately reflects the date of completion of the translation itself, the accepted chronology requires revision.[25]

The consequences extend beyond the history of Moerbeke's translations. Also affected is the dating of two works by Thomas Aquinas (ca. 1225-1274), namely, the *Summa contra Gentiles* and the *Expositio super Iob ad litteram*. Indeed, Aquinas' use of Moerbeke's translation of the *Historia animalium* in these works (which are the earliest known quotations of this translation) has played a role in the discussion of their dating. The new evidence provided by Vc invites a reassessment of at least one of the chronological assumptions underlying that discussion.[26]

Perhaps the most suggestive implication concerns Moerbeke's working method. Considering the short interval between the dates of completion of the two translations reported in Vc (a mere 32 days), if both dates were to be accepted, it would not be far-fetched to hypothesize that Moerbeke, at

[24] See especially Bossier (1989) pp. 290-1: "Il nous paraît probable qu'à peu près à la même époque (1262-63) Guillaume avait aussi le *De hist. an.* sur le métier, c'est-à-dire qu'il s'occupait alors de la traduction tout entière, ayant traduit probablement le livre X déjà un peu auparavant. Il ne nous paraît pas assuré qu'il a traduit les livres I-IX d'un seul élan et dans l'ordre qu'ils occupent dans les mss grecs". See also Beullens and Bossier (2000) p. XVI.

[25] Incidentally, the date in the colophon of the *Historia animalium* in Vc also provides an argument against the hypothesis that the date in the colophon of *De partibus animalium* in MS Fesul. 168 refers not only to the translation of *De partibus animalium* itself, but instead to that of the entire zoological corpus. On this debate, and for the relevant literature, see Vanhamel (1989) pp. 332-3.

[26] For a synthesis of the debate, as well as for the relevant literature, see Beullens and Bossier (2000) pp. XVI-XVII.

least for a certain period, worked at the same time on the translation of both *Historia animalium* and *De partibus animalium*.[27]

Finally, the manuscript has implications for the textual history of the *Historia animalium*. Since Tz breaks off before the concluding gynaecological chapters of Book X, Vc (in which the text of Book X is complete) warrants particular attention for the final section of the treatise, Book X, 5-7, as it might represent the only known witness of that section not belonging to the a-tradition.

It is in these final chapters – as in Book X more generally – that one of the most distinctive features of Moerbeke's translation becomes especially conspicuous: the frequent blank spaces left for Greek terms that remained untranslated. As already mentioned multiple times, while the a-tradition eliminates these spaces, Vc preserves this feature in a form that, for the part of Book X present in both witnesses, makes a detailed comparison with Tz particularly valuable. Such a comparison, extending also to the size of the blank spaces, may offer a new criterion for assessing the proximity of both witnesses to Moerbeke's original translation, where such blank spaces must have been originally left.

Conclusion

Much remains to be investigated concerning Vc and, especially, the text of Moerbeke's translation of the *Historia animalium* contained in it. The place of this witness in the manuscript tradition of the translation, the nature of its marginal and interlinear glosses, and its unique colophon all require further study. Yet even our preliminary account in this article shows that a witness long overlooked has the potential to reopen questions that have appeared settled for decades. To facilitate further research, the complete photographic reproduction of the text of Moerbeke's translation of Book X of the *Historia animalium* in Vc (ff. 85vb-89ra) is provided in the plates at the end of this article.

[27] That Moerbeke may have worked at the same time on multiple translations, even as a general practice, has been explicitly considered by Bossier, who thought that it was "not impossible". See Bossier (1989) p. 293: "[...] si Guillaume était coutumier d'interrompre les traductions qu'il avait sur le métier, ou s'occupait d'ordinaire de plusieurs traductions en même temps – ce qui ne nous paraît pas impossible–, [...]".

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Photographic Plates

The plates reproduce the text of *Historia animalium*, Book X, as transmitted in MS Vercelli, Museo Leone, F5, ff. 85v-89r. The images, published by kind permission of the Museo Leone, Vercelli, are presented in their original sequence and correspond to the manuscript foliation:

Plate 1. MS F5, f.85v.
Plate 2. MS F5, f. 86r.
Plate 3. MS F5, f. 86v.
Plate 4. MS F5, f. 87r.
Plate 5. MS F5, f. 87v.
Plate 6. MS F5, f. 88r.
Plate 7. MS F5, f. 88v.
Plate 8. MS F5, f. 89r.

tatul aut semp mutuglare ꝓmittat
mag. ꝛ sompnulā uterul ꝑlam qui
d fit. Demoratur à tarde fantalias
Alus quid & alibus nulla dria ollium
si omia plā fiunt. puerul à bregmate
lle ꝛ tarde ꝓgnatur. Et h quid nasꝯ
hūta hītel. puer à septiō mīse ma
ꝓuit dentel ꝓduc. Pduat à ꝑmo
antiorel. hu quid supiorel ꝑul. hu
amflorel. omīs aut tatul pduat quo
rū nutrel callul hīt lac. Post ptꝫ
à ꝛ purificatōnel mlibus lac hīndat
quibda nō solū ꝑ lactatōnā. sz et
m mlius locas ubis. quibda aut et
ſ ascellas. ꝛ ꝑmanet in poſtiul strūga
latel. ci nō emittat. totum. n. ub. ē
comfortata aut ꝛ si m corꝑe acꝑuit
pul. dolor mist in ubibus q̄ uocat
pilrare. donec à spontaneus egre
diat tūis cū lacte. aut ex lingua
lac à hīt donec iām ꝯcipiant. tē
à cessat. Et extinguit similr in hoīb
ꝛ alus alifitas. ꝛ quadrupedib. lacte
à exeunte. nō fiunt purificatōnes
ut fit ꝙtidie. qm iam quibdam lac
tantibz. fcā est purificati. ꝛ si aut
simil ꝑmulta loca nō accidit impetꝫ
hūitatis. uelut hītibz emoꝛoydal.
tenoꝛes purificatōnes sꝛ uenīunt.
Quibda aut ꝙ ūteb' iam a ubis
segregēt. ai qm uenat in mīcel
Et quibcūmz à si nō fuit purificatō
nibz sanguis ꝯcidit uomītel nichil
ledunt. Consueuit à ꝑuos plmos
spasmo capi. ꝛ magis mch' nutrioꝛ.
lacte utentes. ꝛ plurimi ꝛ grossio
ꝛ nutribus bri carnosis. Noctiū
à ad passionē. ꝛ unū nigrū magis

albo. ꝛ q nō aquosū. Et plima mīstiō
rum. Et si uent stetit plimū ꝑmit cū
septimanā. ꝑ q ꝛ nō ia tuō tempoꝛe
tanquā ꝯsidentes iam magis de salute
Et in pleuritidib aut uagis dolentes
pcloſum aut ꝛ quibcumz puero
rū spasmi a dorso incipiunt.

Procedente à etate
uiro ꝛ mulieri nō
q̄ grandi mīuce ꝯcutel. cū alīq
ō im ambobz est. alīs in alco solum.
Primo quid & in semella oz ꝯsidare
que cā miceſ quo hīt. utriquid
in hus cā. hec sonciant cura. fcā nō
in hus cā aham aliqm cārum fac
ant curam. Et à q adm ucā aliam
ptem mamīe si sana est. cum opus
q̄ sufficient efficiat. ꝛ si dolore sit
ꝛ post opationel sī dolore. uelut o
culus cū tristitia nulla efficiat ꝛ ui
deat. ꝛ post ulionē. ꝛ nō sit turbato.
in impotis sit unde ūtum. sicꝛ ma
nus dolore nō exibens. ꝛ q uilus est
si sufficient opans. ꝛ post opa nō im
potens. si sī dolore. Dz aut ꝛ non
bū hītem mīcem. cū ad opus ꝑ
fectus opus est hec q adm oculum
nichꝫ ꝑhibet ꝙm unde diligenter
cū hīte oclo bū omīs ptet. aut si
pustula. Simili aut ꝛ mīcē. si hic
at optimū locū. nichꝫ utiq ad hoc
nocebit. Oz itaq hītem bū mīcem
ꝙmo quid loco nō in alio. ꝛ in ali
o ee. si similr ponē. ꝛ ꝙptū fuerit
remotis sū passione ꝛ ūtia. ꝛ in
chꝫ insensibilioꝛes ee tactal. hec à

Hic terminus tractatul si est correc
tus multū bñ te gnio.

udicare nō difficile. Q' aūt or tales cē
exhuc manifū. si nō. n. ꝑte emūctor
nō erūt simil' tractue. longe. n. ab
ipis eor locis. vñ or assimīe. si à ꝑte
maneāt. nō ꝑoler reddre longio sur di
orel erūt. tangi à sp utiq; nō ato api
ri. or à ij uehemiter facere. ibi au
ditanc cē. ij g' or erūte. quibzam á
nō erūt. hec cura indiget aliqua. sr
ultra fi bri. ij aūt est ꝑ equalia
ꝑa. 7 nō errabunde sano aūt corpe
signū. n. sicuꝫ frā bri ynē ad apiri.
7 sustine cā. que gr corpe hūitatem
cā corpus dedit. sum aūt sepul aqe
tanus. aut errabunde emittanc à
corpe nō cā exīte. sr sano. nec hoc
accidē ꝑe ipal. 7 ꝑe sinditatel. slona
punctur aūt m ꝑibz. ut pauci ꝑ
suscipiant. aut mag' attribuit hū
dum ꝑe quādam flegmalia ipārim
q; cura signt indigē. q'dam 7 oculi
uellica 7 uenē. 7 alia omia. n. loca
flegmatizantia trahūt hūitatem
talem q; nata est segregari i unū
q; locū. sr nō talis. aut tanta. sili
a 7 minꝰ plura tbuent sigē flīcam
aliq; passionē. si filia quid' plura
à tribuit. si à filia 7 putredā ma
g' q; qualia sanus ꝓcedunt. tūc
quid' iam pal 7 notabil' fit. sicce
n. colores quosdam notari hūas.
ut nō or sanus alba 7 putredā pro
cedunt. hinc quid' 7 incipiēti bus
plimū à delinentibz meliꝰ. qui
bzcumq; quid' g'.
mag' fuit q; sanus. aut in ordi
ta plura. aut pauciora mag' in
digēt cura tanq; impedientibz

ad pluta quibzcumq; à quibus
solū ut regl'ibz. 7 nō ꝑ equale mū
quid' phibitia passio sigē tū mīuat ij
tū motū. 7 nō sp similr manere. sīt
à ij passio qualis quid' lenere bri natas
ad ꝓceptom. nō tū mīnuat si talis au
qua passio. qualis q̄libet delitut. 7 sī
cura. sino aliq; ad ꝓcet ipi. si á ꝑua
tentur ordine. aut multitudīe aliq
corpe nō simlr hūte. sr alū quid bri
ore. alū aūt siccatore. nec; ee mīores.
sī or. q̄sequū corpis hitum sucapiente
7 emittēte ꝑ ratōm. si quid g' sa
no corpe ꝑmutato à ij faciant. nec
ꝑe indigēt alia. si aūt languen
te. aut mīno tradant. qr alicubi ab
bri q̄libet sup fluū. aut laborat cor
pus. si à plura emittant. qr hinc
inde ij sigē ipal mīuat
indigē cura. si or tanqm cum nēbz
cumq; corpis hitabus ꝑmutent mu
tuebna. manifestat q; nulla cā m ꝑ
mīcabz est. uelut q; sanc ꝑseue
rant. ꝑe aūt se ipis alū quid ifir
mior. alū à ualent mag'. 7 alū
quid' hūdior. alū à siccatore. 7
ipis qui quid' plus fūt
corpus ipius pla. qui aūt mino mu
tora. 7 liquid' hūdi aquosiora. si
à siccā. sanguenora. 7 iapūt quid' ex
alb'. q. lacteis cū omne quid' exīte
ij à primicia. delinentia à albiora
ultime delinētie. odorem aūt bū
tia alba. ij nō. ser
7 gustore in lenica
7 sū quid'
e calīte. tū eā ulte fūt modo signo
rū. Quibzcumq; quid' sic accidit hūs

mul' sū passionē sicut uenit. remittē et magnat' sua. mundos ipsam sū. tuitionē. ne. ipsa. q' ruch' solitudines fiat. qm' ex nu sicut. in nā. in infirmitate ip' q' uno uitiat mulier. si' corrumpunt eam humores liquid uehementer tales sunt adhuc puel' existēs. si á mamm. mamorel. si á sinu quicte. priora. humunt á fetul. uelut. uale pueio mutari. adhuc á tacte que. á tactu. et q' ad simul' regulam ipius est. et alia huj' simulit. et mco qui ad unum cotū intimedui humtan nō sepe á ual' tu. fit á si passio uelut reludat' loca q'dm' rone diluuiano. et ad oblatēm aboz. et cū loquamur et opemur ipi' plus. et oculi' manamur ad fulgentia intuentes. et fgore. et calidita te fortiū cū dnantur ptes hec cum fue rint humidi humiles. sic et mulier humec tantur. oportet cū sint humidiores dū pūt. patum' aut hūc passionem. et q' mane bñ apte nate sunt. pp' q' cita sp indiget mulieres. aut amplion. aut miōr. q'dm' rone spuitōne. si quib' dam tanta humitas fit. ut nō possint puerū q' um attherē pp' omurtum fiē á mulere humitatis. cum huj' aut' passionis bi. et tui or solidare si accidit cū putant' in sopno. premare uno quo huj' exurgit puta si tebliot. uinō semp nō alii quid. alii aut ri. aut ali qui et fortiō. si aut' nō licuer. primo tenui humectat' oz. n. h' accidē. plifice mulie dissolui quid'n. siqt emissiui ē corp sperm' sp facit et corpulent' á crudis tebliot. hec á si infirmitate pat. signū. q' sem' imm. et quo oz mō abscessus humus fit. si nō in. langorosa erat infirmitas

nūquid. et ualde mag. licitam est. Pualde
mulierem. tenui humitatu signū. q' totū corpus accipit. et estimant. et nō soluū mulier. et corpa ualet. opus. n. habuerūt. q' adueniēt ei ipi. sicut huj' dei ē nā. n. in se ipm emittit. et ubi et utrā anim á spū omia operantur. qui palam. q' nos attributum q' talis. sunt á quedā que putant aliquid tale q' uocant examinari. et utraq' hor q' nō pati. est á talis passio. cū omittant uno nō alia emittentes sperma. in q' et uocatur examinari. cā huj' passionis mulier. cum fuit ualde sicca. et mens. n. ad ipm humidum. diuertit ee. et aut solutur. et modicum quodā sem esse ipo. credit. et latuit. pp' putatem egredient. et qui quid hō ualde patiat' mulier. et uat ualde sicca et to q' abiecit. et ato palam fit. q' non gestat. si á nō ualde ato hō faciens' in Picat
mtimedio tpi putant' gestare quan diu at ipa ad se ipm. donec utq' curatur et similes acuit ato huj' passionis qua les recte gestantib'. et fiat multi qr eleuat mulier. ut manifē putet' ge stare donec cadit. tuc aut similis fit qual' primo erat. autem á hūc passio nem. et est curabilis. si nō nā talis. aut uehement' pungit q' patit. signū á nō talis ee si appet nō emittentes. cū accipiant a ure. et nō accipiant. phibentur aut. et si spas mos fiant mulieres. sunt aut sperma ta in mulieb'. aut flegmatia tensi mulier. aut in ptu replone multa. Flegmatia

macerate. ꝛ nō apto ore
tunc ā dulcedine fit spasmꝰ. Signū ā
nō hñdi spasmos. si nō utitat in fleg
matib; ꝑ pinges in ꝓpis opib; mix-hu
bens. n. spasma. flegmāt; habet utiq; ab;
Adhuc ā si nascentia in ore fuit mul
ta ñcrete impedit ad ꝯceptiones. Sig
nū aut ꝙ hoc nō hñant. si utitat ap
ta bñ mix-ꝛ claudent cum frā fuit
ipis mulieb-ꝛ uiris ad unū. Adhuc
est quib; ad oscoplant. hu quid ā nati
uitate. huc ꝑ infirmitate. ꝗmu fit ā
lī-ꝛ sanabile ꝛ insanabile. Non difficile ā
h cognoscē si fuit nō. n. possūt mi ac
cipe nichi eop; que or mi emittē. Sig
nificat ꝛ insapiens ā uiro ꝛ dimutus
in manifin. q-ꝛ utiq; elenchus sic ꝑ
pas. Quib; cum ā horū nlīm impe
dimtū. si hñt quo hec or dem est. sinō
uir ci fuit sīlitatis. Aut ambo quide
possūt ꝓlos facē ad inuicē aut non
sint ꝯmensurati ad simī emittendū. sed
multi dissonent. nō erit pū huic. Ad
secundū ā sique uir ci. est quid ꝛ ali
a signa accipe. que maxie uitabuntur
ad alias appinquās ꝛ gñans. Cum ā ad
inuicem nō eod cursu se hñant omib;
dās ecīnibus nō gñant. Declarant. n.
q-ꝛ si ci solum. siquid. n. ꝛ mlier offert
ad spma ꝛ gñonem. palam q-or equa
lit aute ab ambob;. Siquid ꝙ quid cito
efficat h ā uir ꝑ ꝓma. n. mlieres ꝑ
tardiores h phibet. ꝑ q-ꝛ alīr ꝯiugati
gñant cum inuicem nō gñant. cum
maḋint equalit cum ꝯuenientib; ad ꝑ
cursū. Si. n. h quid impetuosū ꝛ pata
fuit ꝛ intēpestiuū est hmōi ꝓuenit. h aut
ꝑtristato ꝛ infirmitate insipiato. nec te
equalit ꝯuenit ipos ad inuicem. Et aute
alīs mlibus. ꝛ ci insopitus emittit ec
uirus ci coierit accit medicū ualentes ē
nō roborē si; sanitate. fit ā h cum multi
spma fuit ꝯgregati in loco ui ejiciunt
Sig tuc absedat nichi debiores fiunt
nō. n. ꝑ dissoluitur absedentib; cum
sufficientia fiunt relicta. In utiq; stulta
i utilia fiunt simul ꝛ facile uelut ꝯ repleō
ne lubrica. ꝑ q-ꝛ nō roborē medicū ualentes
si alleuatōne fiunt. Si ci ā tantus quib;
corpus. indiget. tuc debiores fiunt. celer
ā cato. Si ā alīr aliquis sano fuit ꝑ corpꝰ
ꝛ in etate fuit q cato spma facit. celer
abī. n. h est cato ꝛ acessibilis, ꝛ nesciunt
ē maxie impgnate. nō. n. putant eo
cepisse. sinō senciant emittentes

Existimantes q-or in ambob;
ꝯuenit. ꝛ a mliere ꝛ a uiro. Oportet
ā latet ci putent in pole ꝯcipe. sinon
ex ficitate fiunt. Et notabilis differat q
datū est. Accidit ā plus emittē ꝛ ipm ꝛ
uirū. q-ꝑ nō utiq; potunt absorbē, ꝛ suf
ficiens. Cum ꝙ accidit quid sufficiēs
relinq̄tur ā multi. tuc nesciūt impg
nare. Qđ tale ꝯtingit fi. ꝛ nō ex om
ni ꝑte pal. manifant que or alii ab imo co
uulsa multa pmunt. ꝛ germinū gno cum
ab imo fcā fuit, si ꝑte aliqm ipius ac
cepit. Aliquis locus hmōi ā rebiquit q
multiplex. Adhuc ā si multa ab imo
coitu fuit. q-quid uī in fundo. ꝛ ingre
mus. abi fcm palam. q-nō ab omi
uenit spma ā corpe. si in unoq; ꝑ
ptū fuit. ab omi quid ꝙ. ꝯtingit se
parī ꝛ totū in multa q̄ simul. ꝛ sem
ptem mixtꝰ. Adhuc mulier emittat
in anteus ouī matum. ubi iuncta ꝛ

Prolixe

Parabir

Vacillare

Sufficiat

Pulsū signū
orare fetus
fuit

ꝑ̃ quatuꝫ oīa. n. quecunq; non
organꝰ adduꝯ. aut in sufflatōm hꝫ
celuꝑ ꝯcaua exĩtia. aut ſpũ ẽ hꝫ ex
loco ꝓ q̃ cumit quo fiat ſicꝯ uſte ſlaut
mĩ ſ acuit. Si a apta nata eſt ꝛua ꝑ q̃
uemt mlibus hñtib;
q̃dm uum putendũ. ſ in coꝛꝑ efflanc
ſupꝰ q̃m ũmenc
g ꝓ ꝑm Pecuniꝫ
mlieres. ꝓ q̃ ꝛcũ matent ucuea pati
uſte locuſ nõ ſ ſimlr. ꝛ aũq; matureñ
tur. abſ utiq; cãnali fit ẽtentia. ꝛ q̃
antius mũcꝰ multo mauſ q̃m ꝑ quem
in illũ locum ẽcidit. Simle eſt a hꝫ ꝑ h
narib;. ꝛ. n. narel hñt mto ad ſtuces
pouĩ q̃ dm. ꝛ ad ẽctionem aem ſic ille
ꝛ ex hũc pouĩ puũ uatte. ꝛ anguſtũ q̃m
ad ſpẽ exitũ. cũ aut qui ad int̃ius mũ
cꝰ amplũ. ſic narel eũ qui ad auꝛ ma
iorem eo qui ad oſ ꝛ fauces. ſimlr a ec
mlieres maiorem eũ qui ad aũtius mũ
tiaĩ pouĩ hñt. ꝛ ampliorem eo qui ex
q̃ oſtit ad hꝫ eiste paſſio
mib; q̃ mlier emittit eeꝛem
a c ẽ ꝛee acnit. ꝛ. n. quib; auꝛ mſtua
tꝰ. aut mortuꝰ uidet alcius cũ eẽ oſtite
rint ultimũ ad pꝛapia. q; oꝛ uideꝛ hꝰ
quid. n. ꝛee oīe pme huc a nich. houi
a hꝫ quid. ſ aut nõ. Alligñt g ꝓ ꝛonem
ꝛ euemẽtia. ꝛ huꝰ quid ꝑ oīs accidit
ꝑtĩne eaſdem paſſiones. huꝰ a ꝑ multas
quib; multe. huꝰ a ꝑ paucas. huꝰ a ꝑ
nullam. quibꝰcum; nulla. Mamilla aut
alia ſint cum coitũ pati indigeant. ꝑ
ſequnt maſculos. uelut gallinę ꝓſequi
tur. ꝛ ſuppomit ſe ipaſ. ſi nõ mouꝰatur
maſculꝰ. hꝫ aut facit. ꝛ alia alia. ſuꝰa
q; eeꝛem paſſiones omibus alibus u
uent ẽtes eẽa coitũ palam q; ꝛ oīe
cauſe
accũtes. ſ. ꝛ uũo auꝰ quid nõ ſolũ acnpẽ
di ocupiam. ſ; et emittẽdi. Signũ aut
huꝰ. ſi. n. nõ adſit maſculo. cadit ſuꝰ p
ſam. ꝛ ſ; gnans ſit. ꝛ ꝓ ꝓpenemia. ſicut
ocupiſcens. ꝛ emittendi. tũc ꝛ emittens
tũ ꝛ cum maſculo extũ. Facium a hꝫ ꝛ
alia. q̃m ꝛ cantantiũ locultarũ quedam
capta fiuꝯ nutens ad huc reñas hꝰ ꝛ
fẽ ſunt augmtate ſ; gnantes. ſ. hꝰ
utraq; palam q; oſt ad ſpma
ſiquꝫ ꝛ in uno gñe uidet hꝫ ſtm n
. n. differt al' ꝓpenemiũ ab hꝫ nili q; nõ
q̃ntat. al' hꝫ aut q; ꝛ ab ambob; uenit
ꝓ ꝓ nꝫ q̃ a maſculo omia ꝓfecta uide
tur. ſ; queda ſtilia. cum nõ ẽt ambob;
utꝰ coaptata ſint. q̃m mlieres
uhuꝰ fiuꝯ. ut omnte ſilint
uuo. eeꝛem paſſiones poſt
dilchiõ. ꝛ in potnta palam g ſ in
uuꝰ emittentes. ꝛ tũc oſtit q;
ꝛ poſt. ſ; ad locuſ humecta
tur. ꝛ cura indiget. ead ipe a ſe ipſis. q;
adm cũ omſceant uuo. q̃ manifm.
q; ab ambob; fit emuſſio ſpmatꝰ ſic ꝛ
beat ee emittit a non
in ſe ipaſ mricet. ſ; eẽ ubi ꝛ iur. q̃ñ
nõ ẽmt in ſe ipaſ. quarũ hꝫ quid ge
ant a ſe ipſis. fẽmina a uelut auꝰ
hꝫ a ꝓpenema. hꝫ aut nich. uelut equi
ꝛ oues. aut q; auꝰ quid ꝛ in mũiem e
mutat. ꝛ nõ eſt ee locuſ in q; emutat
in maſculo. ꝓ q; ſi nõ fiuꝯ coiens mꝰ
ram eſſimdit quadrupedib; a eſt ẽ
locuſ aluꝰ in q; ꝛ femella emittit et
maſculꝰ q̃dm aluꝰ quid cum aluꝰ
hiudil oſtendit. ꝛ nõ oſtat in mlier
ꝓ nõ ingoi. auub; a acipiens mũr
cum dgit. ꝛ coꝛꝓ. ſimle ẽm alia. ſ;

nō al. ꝙ q̄ ex ambob⁹ al'ē. Si aut
mitat⁹ fuerit dīc dimissi q̄ si fier⁹
fuerit posset. ꝙ ēt mīc⁹ d'sup
q̄ ꝙ quid non ḡnāt ipā f sepā
femina. q̄ mīc⁹ mitt⁹ trahit q̄ u
ꝙ quid nō ḡ. reapte ꝑ ēt hūm
q̄ emissi fuerit ꝙ quid q̄ubd̄am
fuer⁹ passio gētalib⁹ annis nubēt
pueri. n. q̄ uocant molas matres
uelut accidit cuidā mulieri cōmixte
uiro. recedens. cepisse molas ex
me mīal. alia fetā fuit ꝓmo⁹ ꝑtus
fuit at ꝑ fuit ꝓtus. nz pepit. nz mo
lā sed mior fetā fr amus dr. aut
puerū fr ꝓmisit animam dissen
tis fetā pictura ita pepit cuiusdam
q̄ agnē q̄ritant⁹ q̄ uocant mo
lam quibusdam ā. cū senescat par
tus. ꝙmoue. uni ꝙ ēt calitat⁹ misse
passio h⁹ aut cū q̄ tegit mīc⁹ calida
fetā cuius ꝙ ḡtia. ad se ipm
rāpe ut fr aut pere. suade. n. sepā.
fetā. h⁹ filius fuo matrī ponant
ab ambob⁹ h⁹ fiat ꝓtermissi q̄m
gat ab alio h⁹ fr uocata mola
mal. ꝙ q̄ q̄ nē ni ambob⁹. nī mi
ātam. ꝑ ātam accipiat ēt si
tut ꝓtema. multo q̄it ꝑ. m
manet. ꝑ mīal dispone. m. q̄ qu
q aut quid mitta mīc ipm ꝓtem
ab⁹ fetā in mīca
adducat. rapte. rei semē
nulla mo egredit. n. ē. n. est ꝓbens
si f corpus emissui fetā. cū repleb⁹
tur no amplius mīcem facit. ḡ
ceptuam. Quecam aut alia sūm
ꝙ ꝓmutat ihuc augmtat. rali
al' alio indige. almā sup flegmat
ami aliq̄ mīc⁹ facit ꝓti. Sano ā ꝙ
nō aliq̄ al'ē h⁹ unifor mib⁹. o. n. q̄d
ḡ uat mīcem. mih
ue aliquib⁹ ḡmicat. pallio simon ꝙ
cuiusmō mīc⁹ accidat. aut ante
ꝓ ā dilatā. utrū aut sicut dr
ꝙ calitatem sit pallio. aut magis ꝙ
humiditatem q̄ ē repl⁹ uelut
cū nō sic fuit. sic mīc⁹ uel
mutat. nz sic calida. ut dicat. ꝙ q̄
morosa pallio q̄ adm̄ que mutatōe
multo ꝑ ꝓmanet. Decocta aut ā
nubēt. uel ocatate ralef aut mīc⁹
q̄uiter ꝑ facit
multa. adhuc ā ꝙ nō q̄ē nō
ti nō fiat dolorem. nō. n. ligam
ui dolorē sunt q̄ ꝙ mīc⁹ emittit
embo. r durat. ā fetā. re mō. mitt⁹
q̄ est sic. sic. sic. ut dolens nō
pellit dicēdi. Decocta quid ḡ. remā
digā molla fiant. sume aut
ḡ. ri. dicā. q̄ multi media ignorant
ꝙ similitudine
pallione ꝓmuet. si solū uidant uen
tre. elevatos sin ypogā. mīcm no
ui fusionem. cū mora fetā h⁹ pallio
hoc ā nō etsi raro fuit sic
aliaq̄ quā sic fetum
uidani. supfluam. aquolatum
aliaq̄ quid ḡ. ollioni. mīc⁹ qui circa
uentre. si ꝑ uā tale. in ūm. sum
h. n. nī dolorem ꝓmittēs. erubens
ui calitatem ꝙ fetum. Juuenum
ā accipientia. h⁹ quid mali h⁹ aut nul
nulla alia. assumit mīmutē ꝑ
ter se ipā. h⁹ sicut alia. ni aliq̄ quelat.
absolut ā melius. sic ꝙ mal ghum
sup fluunt. ḡ. ab. ri. cal. lactent. ḡ

n. huf aut nō fumt: aut pauca. ahi ā
rmēmedui locī mūtaf. ꝛ uentuf oflueī
ꝙ came putāt cē nō ernīscit
ā nō difficile diſcernere ſi tac
ta mice. ſi. n. fint ꝛ nō hmī
macerītum. palam q nō in illa paſſio.
ni ā talī fūit: uelut qī puerū bīt
calida ꝛ frā ꝛ ſicca erit. qī mto ūſi t
ſumt hmida. nof talī qualiſ eī gerent. ſi
ā aliq aliud fūit. molet erit frā tacta ꝛ
nō ſicca. ꝛ ſemp oſimle. Maxime aūt
latent quecum putāt impoſſe cē ocp
ſi nō exiceret. ꝛ notabili diſpeat datū. Ac
adit aūt alī plus emittere. ꝛ ipm ex
uerū. qī q poſſit diſpere facere. ꝛ ultra
ſufficere. Cum g attractū quod ſufficiēs
relinquat aūt multū. tūc igoranter ī
mīgnanter. Cum ā tale contigat fieri q
nō ex omī fit paſſio manifēſta quecum
q alium ab uno coitu multa pueri ꝛ
gemmaꝝ gño ſi ab uno fiat. palam. n.
q nō ex omī fiebat. ſi ꝑtem ipius acce
pit aliquis locus. hāc aūt relinquit
que multiplex

Explicit opleta anno dñi. ꝏ. cc.
lx. vii. kl. decembris.

Jtem omnē ethicam .i. cōē placitū
ꝛ methodū ſimili hūmi .i. min nobilē.
lioꝛem. ꝛ honorabiliorē
duo intēnt modi. hūtuf cē. Quecū hīc
quod ſtām rei bñ bñt applicare. huic ā
uelut eruditōm qda. eruditi. n. eſt ſm
uodū poſſe udicare bñ onestū abile
quid bñ. aue nō bñ aſſignat. qui diat
talem utiq; q̄dam ꝛ totalē eruditum
cē poſſe. poſſe facere q dam eſt. Imp
tū huic quid ꝛ omībus. ut eſt diſpuā
catiuū putamo cē hmū nimo exacte.
huic aūt ꝛ quadam natā ad inatā huī
in. utiq; ⁊ aliquis mō eod mō diſpoſitō
ſ ptem. Quare palam quia quid hy
ſtoruc ꝛ nā or quodam exulē timoſ tu
les ad quoſ ꝛcēns ſuſcipiet modum
oriſorum. ſiue ſ qualiē bīt uerū. ſiue ꝑ
ſuſ. ſui alie. Dico aūt puta utrū or acci
pientes una quīqueum ſuam ꝛ hac
ꝛtinare ꝑ ipm puta ꝛ natura homiſ
aut leoni. aut bouiſ. aut alicuius al
tiul. ſm unūquemq; conantes. aut ꝑ
oēs accīta omibus ſ aliquid omni
ne ſupponentes. Multa. n. cad erūt
multis grībus altis erītibus ab inui
tem. puta ſompno. reſpiratō. augmīn
tatum. motū ad huc quecumq; ta
lū reliquarū paſſionū. diſpōnum. In
manifm. n. ⁊ materiatum eſt diē nūc
ꝛ hmī. Manifm aūt q ꝛ ſ ptem qui
d dūtes. ꝛ multis dicemo multoc cad
ſtan. equis ⁊ cambꝛ ⁊ homībꝛ erūt di
ctoꝛ quali. Itaq; ſi ſ unūquemq; ac
cīpiētium diat quis. multoc. cogetur
ꝛ eſſe dicē. Quecum cad quid erit

videt q ſcda ſua ſit h
ad q ut diat Boetius
omne q ē idē eſt q unū
nūo ē ſcr. ſbe ſic ſūt ſic
q̄ntā ⁊ ſpēs. q ſic ſbe
ſūt unū nūo ſ ſic. q eſt
unū nūo ſ ad. q ſic
ſbe ſūt hoc ad ad hoc
dd. ē q d. ē unū nūo ā
ī alia aut ē ali ſi ē
alīq ē illud q ē q poſitum
ē mā et forma talis
unū nūo eſt ꝑma ſua ſui
hoc ad ſi conſideret q ē illud
ſ m nō ē q ſpēi q mā et
forma et ſ unū nūo eſt
ſua ſua ſui ble un equo
accipiebat unū nūo. nec
q hoc aliud multis modis
diat uno m hoc ad idem
ē q aliq agg ad ggnm
ex materia et forma. ꝛ m
ꝑma ſua dē hoc aliud aliom
dē hoc ad q ſ medij ſe ex
ſtendi. ꝛ m alia dē hoc ad
alio m dē hoc aliud ꝛ poſſibi
tatem qua ſ ad diuſos ſor
mas et hoc m ꝑ materiā dē
hoc aliud

MARCO GHIONE

IL LIBRO *EPSILON* DELLA *METAPHYSICA NOVA* ARABO-LATINA NELL'EDIZIONE *APUD JUNCTAS* (1562)

Abstract

The Giuntine edition of Aristotle's *Metaphysics* (1552; 1562), centred on the Arabic-to-Latin translation of Aristotle's text together with Averroes' *Commentarium Magnum*, became the most widely consulted printed version of this work during the Renaissance. The present article examines Book *Epsilon* as a specimen of the *Metaphysica Nova*, comparing the 1562 Giuntine text with the earliest manuscript, Paris, BnF, lat. 15453 (13th century), the authoritative Vatican manuscript, Vat. lat. 2080 (14th century), and the *editio princeps* printed by Laurentius Canozius (Padua, 1473). The Latin tradition is further compared with the principal Greek manuscripts – Vindobonensis Phil. gr. 100 (J, 9th century), Parisinus gr. 1853 (E, 10th century), and Laur. Plut. 87.12 (Ab, 12th century) – as well as with selected Arabic readings. The comparison shows that the Giuntine preserves a textual profile closely aligned with the earliest Latin tradition. No separative error within the Greek tradition has emerged that would require the Arabic-Latin tradition to stem from a different archetype. The evidence collected here so far supports the hypothetical reconstruction of a common archetype underlying both the Greek and the Arabic-Latin traditions.

Keywords

Aristotle's *Metaphysics*, Arabic-Latin Translation, Intercultural Textual Transmission, *apud Junctas* Edition, Michael Scotus

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English Title

The Book *Epsilon* of the Arabic-Latin *Metaphysica Nova* in the *apud Junctas* Edition (1562)

Aristotelica 9 (2026) pp. 127-145 - ISSN: 2785-4515

1. La traduzione arabo-latina della Metaphysica Nova: perché riproporre l'edizione apud Junctas[1]

La tradizione indiretta della *Metafisica* di Aristotele rappresenta, in tutte le sue fasi, un terreno di ricerca arduo e complesso. Imprese internazionali di grande rilievo, quali l'*Aristoteles Latinus*, hanno reso disponibili molti dei principali testimoni della tradizione latina, ma non ancora la cosiddetta Giuntina, cioè l'edizione *apud Junctas*,[2] più volte mandata alle stampe nel corso del XVI secolo, perfezionata nel 1562 e successivamente ristampata nel 1574. Il presente lavoro prende in esame uno *specimen* della *Translatio Scoti* che costituisce il corpo principale dell'opera, successivamente accresciuto nel corso delle edizioni, già a partire dalla *editio princeps*. Lo *specimen* è costituito dal libro VI, cioè il libro *Epsilon*. Il libro *Epsilon* è stato scelto sia per la sua brevità sia per il suo ruolo introduttivo rispetto al quadro teorico generale dei libri centrali della *Metafisica*. La stampa che lo contiene, che riprende in larga misura il testo già pubblicato nell'edizione del 1552, rappresenta una delle forme editoriali più fortunate e più accessibili dell'Aristotele Latino. Proprio per la sua fortuna, e per la stabilizzazione testuale che essa registra, la Giuntina del 1562 costituisce al tempo stesso il punto di arrivo di una lunga storia editoriale e un banco di prova privilegiato per osservare il modo

[1] L'idea di una trascrizione digitale integrale dell'edizione *apud Junctas* della *Metaphysica Nova* è stata proposta da Silvia Fazzo nel contesto delle diverse attività del Seminario Aristotelico FINO-UNIUPO "E. Berti" (2020 ss.). Se ne è infatti evidenziato l'interesse filologico quale strumento di lavoro per la ricostruzione dell'archetipo comune della tradizione greca, araba e latina della *Metafisica*, vedi in particolare Fazzo, Folli and Ghione (2023-2024). Ringrazio vivamente anche la professoressa Mirella Ferrari dell'Università Cattolica del Sacro Cuore per la sapienza generosa dei numerosi consigli e per le puntualissime revisioni; ringrazio inoltre i collaboratori del nostro Laboratorio di Filologia Filosofica, specialmente Laura Folli del Seminario Aristotelico (UNIUPO) e Genaro Valencia Constantino della Maestria en Filosofia Antigua della Universidad Panamericana, Ciudad de México.

[2] *Aristotelis Stagiritae Omnia quae extant opera. Octauum volumen. Aristotelis Stagiritæ Metaphysicorum libri 14. cum Auerrois Cordubensis in eosdem commentarijs, et epitome [...] Venetijs, apud haeredes Lucaeantonij Iuntae,* 1552 (USTC 810938); *Aristotelis Opera cum Averrois commentariis, Octavum Volumen. Aristotelis Metaphysicorum Libri XIIII [...] Venetiis, apud Junctas,* 1562 (USTC 810959). Abbiamo prevalentemente usato, e citeremo qui in seguito, la ristampa del testo del 1562. Per un'analisi dell'edizione del 1552 cfr. Burnett (2013) pp. 55-64, Burnett (2022) pp. 213-4.

in cui le tradizioni greca, araba e latina si sono incontrate, trasmesse e trasformate. La scelta del libro *Epsilon* consente inoltre di verificare, su un'unità testuale completa ma relativamente breve, il valore della tradizione arabo-latina per la critica del testo greco. A partire soprattutto dai tempi di Bouyges e di Jaeger, si è espressa la volontà di integrare la testimonianza dei codici greci con quella della tradizione araba.[3] Il presente studio offre un esempio concreto di tale integrazione, mostrando come la *Translatio Scoti*, pur attraverso le inevitabili trasformazioni proprie della mediazione linguistica, conservi un rapporto sufficientemente diretto con il testo arabo da poter confermare in più luoghi il dettato dei principali manoscritti greci.

2. Natura e interesse della cosiddetta Translatio Scoti

L'intera *Translatio Scoti,* o *Metaphysica Nova*, versione latina della *Metafisica* di Aristotele datata tra il 1220 e il 1224 ed attribuita al filosofo Michele Scoto (1175-1232/1236),[4] si fonda sulla traduzione araba della *Metafisica*, oggetto del *Commento Grande* di Ibn Rušd (Averroè) (1126-1198).[5] La Giuntina, destinata a una straordinaria fortuna editoriale, riproduce sostanzialmente il testo già pubblicato nel 1552, con limitati supplementi ed alcuni accorgimenti tipografici. Essa rappresenta pertanto non soltanto una delle edizioni più diffuse della *Metaphysica Nova*, ma anche il punto di approdo

[3] L'integrazione di questi dati non ha mancato di mostrare criticità, evidenziate a partire da Fazzo (2002), sul *locus vexatus* di *Metaph.* Λ 7.1072b1-3.

[4] Cfr. Hasse (2010). Sull'attribuzione a Michele Scoto e sulla storia della *translatio* arabo-latina si vedano anche Di Giovanni-Primavesi (2016); Fazzo and Zonta (2016); Martini (2001); Gauthier (1982); Haskins (1921).

[5] La cosiddetta *Metaphysica Nova*, la traduzione arabo-latina della *Metafisica* condotta a partire dai *textus* del *Commento Grande* di Averroè, divenne nel primo quarto del XIII secolo la quarta circolante nell'Occidente latino. Venne preceduta dalla *Metaphysica vetustissima*, redatta nel secolo XII da Giacomo Veneto, dalla *Metaphysica mediae translationis*, di autore ignoto, diffusa poco dopo gli esordi del XIII secolo, e dalla *Metaphysica Vetus*, che risulta dalla contaminazione delle prime due. Cfr. Lohr (2023); Borgo (2014) pp. 19-57; Vuillemin-Diem (1995) pp. 3-8; Cranz (1976) pp. 116-28. Per il testo critico della traduzione araba e del commento di Ibn Rušd cfr. Bouyges (1967-1973).

di circa un secolo di tradizione editoriale, dalla e*ditio princeps* padovana del 1473 alle ristampe dell'ultimo quarto del XVI secolo.[6]

I motivi di una rinnovata attenzione nei confronti della Giuntina sono di diverso ordine. Innanzitutto, con il suo studio si pone al centro il testo di Aristotele durante l'epoca della sua piena circolazione a stampa. Questo però non impedisce che la Giuntina sia di interesse per ricostruire fasi di trasmissione molto più antiche e originarie del testo aristotelico tradotto in latino dall'arabo. Stretto è infatti il rapporto con la più antica tradizione manoscritta latina. La collazione sistematica con due autorevoli manoscritti della *Translatio Scoti*, il più antico, Paris, BnF lat. 15453 (P) edil Vat. lat. 2080 (V), mostra che il testo della Giuntina si mantiene vicino ai testimoni del XIII e del XIV secolo. Le differenze risultano, nella grandissima maggioranza dei casi, di natura grafica o ortografica e riflettono, più che un'alterazione sostanziale del testo, il progressivo assestamento della scrittura latina. La normalizzazione grafica intervenuta nel corso della tradizione a stampa non comporta dunque un allontanamento significativo dal testo medievale, ma rende anzi più agevole la consultazione e il confronto con gli altri testimoni. La Giuntina può pertanto essere utilizzata come un utile punto di accesso alla *Metaphysica Nova*. In alcuni luoghi la concordanza delle tre tradizioni permette infatti di rafforzare lezioni già trasmesse dai migliori manoscritti greci; in altri, la tradizione arabo-latina contribuisce a chiarire passi nei quali il testo greco presenta difficoltà interpretative.

Il contributo presenta una trascrizione annotata dei *textus* aristotelici del libro *Epsilon* della *Metaphysica Nova*, trasmessi nell'edizione *apud Junctas* del 1562, e ne determina il profilo testuale mediante la collazione con P, V e C (*Aristotelis Metaphysica cum commentariis Averrois*, 1473), l'edizione padovana del 1473, che a partire dal libro II affianca alla traduzione di Moerbeke la *Metaphysica Nova* con il *Commentum magnum* di Averroè.[7] Attraverso questa collazione non si intende ricostruire l'originaria *Translatio Scoti*, ma verificare

[6] Fanno differenza tra le due stampe, quella del 1552 e quella del 1562 (in seguito più volte ristampata) l'uso di un differente carattere, l'aggiunta di alcuni titoli e del passaggio da allora in poi incorporato nella *Metafisica*: Θ 6.1048b18-35; cfr. Ghione, Folli and Fazzo (2022) pp. 95-117; Helbing (1997).

[7] *Aristotelis Metaphysica cum commentariis Averrois*, Laurentius Canozius; impens. Johannis Philippi Aureliani et fratrum, Patavii 1473 (ISTC ia01005000; USTC 997527).

in quale misura la stampa stabilizzi una specifica tradizione latina e individuare alcuni luoghi nei quali il confronto con l'arabo e il greco contribuisce alla storia del testo. La sostanziale continuità con la più antica tradizione manoscritta consente infatti di utilizzare l'edizione del 1562 come un punto di accesso privilegiato alla *Translatio Scoti*. Il confronto con il testo arabo permette inoltre di seguirne con maggiore precisione il metodo traduttivo e di riconoscere quei casi nei quali la tradizione arabo-latina conserva elementi utili per la storia del testo aristotelico. Un significativo esempio è stato recentemente portato alla luce nell'*explicit* del libro *Eta* (1045b23), dove la tradizione araba conserva traccia di un elemento testuale che nel codice J compare ancora come glossa.[8] Il caso di *Eta* non costituisce tuttavia un episodio isolato. Anche nel libro *Epsilon* il confronto fra le tre tradizioni offre indicazioni utili per la ricostruzione della storia del testo. In particolare, il passo 1026a22 permette di valutare in quale misurala tradizione arabo-latina possa conservare un dettato integro, confermando sostanzialmente la ricostruzione del senso proposta dalla critica moderna.

Così la Giuntina, lungi dall'essere soltanto un testimone tardo della ricezione latina, si rivela un utile punto di osservazione per ricostruire il rapporto fra le tradizioni greca, araba e latina. Tutto ciò suggerisce che tale confronto possa contribuire alla ricostruzione della storia della trasmissione del testo aristotelico e, più in generale, alla ricerca di uno stadio anteriore alla separazione della tradizione greca e di quella araba. Il confronto sistematico tra le tradizioni greca, araba e latina permette infatti talvolta di risalire oltre la storia della ricezione medievale del testo. Quando una lezione della *Metaphysica Nova* concorda con quella dei più autorevoli codici greci, essa rafforza indirettamente la ricostruzione del testo aristotelico. Quando invece la tradizione arabo-latina conserva un testo diverso da quello trasmesso dai manoscritti greci, essa può contribuire alla discussione dei rarissimi luoghi nei quali la tradizione greca appare incerta. Il confronto assume così un valore diagnostico: non costituisce necessariamente una prova decisiva, ma può rappresentare l'indizio di una stratificazione più antica, destinata a emergere soltanto attraverso la comparazione sistematica delle diverse tradizioni.

[8] Cfr. Fazzo (2022a) partic. p. 190.

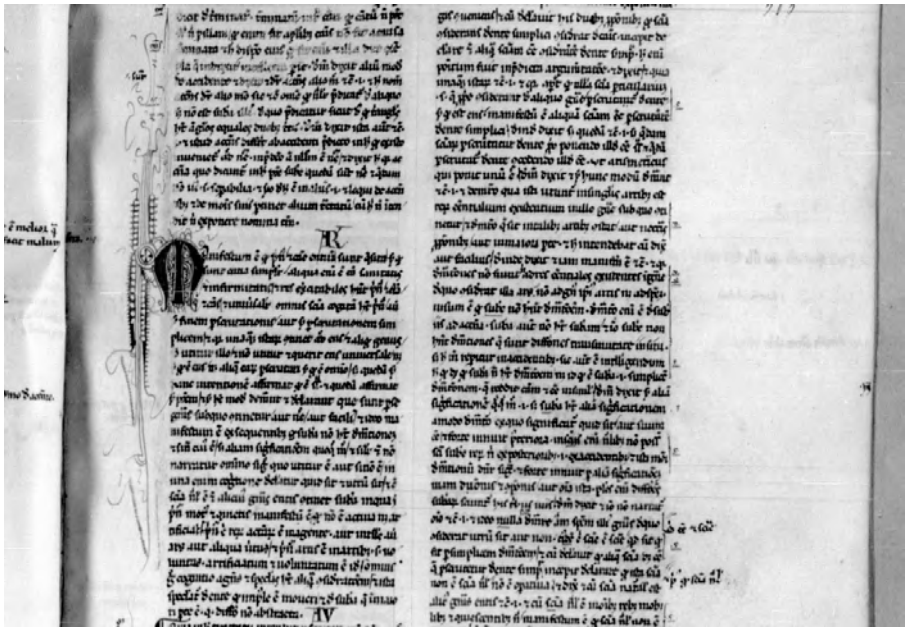

Figure 1: Bibliothèque nationale de France, ms. Par. lat. 15453 (XIII sec.), f. 303r. Incipit del libro *Epsilon* della *Metafisica*.

La presente edizione di *Epsilon*, condotta sulla stampa *apud Junctas* del 1562, offre uno *specimen* della *Metaphysica Nova* sufficientemente ampio da comprendere un'intera unità-libro e da consentire una verifica puntuale delle considerazioni metodologiche fin qui esposte. L'apparato si articola in due livelli. Il primo registra la collazione con gli altri principali testimoni della *Translatio Scoti* utilizzati nel presente studio. Il secondo livello raccoglie note filologiche dedicate nei luoghi di maggiore interesse ai rapporti fra il testo latino, l'arabo e la tradizione greca. Esso documenta come la *Translatio Scoti*, già all'inizio del XIII secolo, conservasse una forma del testo aristotelico anteriore alla diffusione della traduzione greco-latina di Guglielmo di Moerbeke.[9] Per il testo arabo, dove citato, si è adottata l'edizione di Maurice Bouyges. Nei passi di maggiore rilievo sintattico e testuale, il confronto con il greco è stato esteso ai più antichi ed autorevoli testimoni greci della *Metafisica*, in particolare J (Vind. Phil. gr. 100), E (Par. gr. 1853) e Ab (Laur. Plut.

[9] Sulla traduzione di Guglielmo Moerbeke cfr. Vuillemin-Diem (1995).

87.12). In alcuni luoghi la corrispondenza fra le tradizioni è diretta; in altri emergono divergenze, omissioni o fenomeni di contaminazione che richiedono una discussione puntuale. Le osservazioni filologiche sono state sviluppate nelle note, dove una serie di casi vengono esaminati nel proprio contesto linguistico e testuale. La trascrizione conserva l'interpunzione e l'alternanza fra maiuscole e minuscole dell'edizione del 1562 e la sequenza dei capilettera che nelle pagine ordinano il testo, mentre adotta la distinzione moderna tra u e v. Le ulteriori convenzioni della trascrizione e i segni impiegati nel testo sono definiti all'inizio della sezione 4.

L'esame del libro *Epsilon* consente inoltre alcune osservazioni di carattere generale. Nei luoghi discussi non emerge alcun errore separativo all'interno della tradizione greca che renda necessario postulare, per la tradizione arabo-latina, un archetipo distinto. In più passi significativi, inoltre, la tradizione arabo-latina concorda con i più antichi manoscritti greci (cfr. *infra*, nn. 24, 45, 49), confermando un quadro già delineato dall'explicit del libro *Eta*. D'altra parte, le divergenze rispetto al testo greco risultano, nei casi esaminati, riconducibili alla mediazione della versione araba o agli interventi propri della traduzione latina (cfr. *infra*, nn. 12, 18, 19, 30), senza peraltro che emerga traccia di alcun ricorso diretto del traduttore latino della *Metafisica* al testo greco (una contaminazione fra rami della tradizione che inficerebbe indubbiamente il valore probante del confronto). La comparazione tra le tre tradizioni si conferma così uno strumento efficace non solo per la storia del testo aristotelico ma per la ricostruzione o dell'archetipo comune (la cui datazione al IV secolo d.C. proposta in più riprese negli studi su *Aristotelica* risulta compatibile con i dati emersi da questo studio sul libro *Epsilon*), o dello stadio della trasmissione anteriore alla divergenza delle tradizioni greca e arabo-latina.[10]

[10] Le fasi precedenti della presente ricostruzione sono documentate in Fazzo (2018, 2022a, 2022b, 2024, 2026).

3. Conspectus siglorum

Fonti greche
Aristotelis Metaphysica

Wien, Österreichische Nationalbibliothek, ms. Phil. gr. 100 (IX sec.) [**J**]
Paris, Bibliothèque nationale de France, ms. Par. gr. 1853 (X sec.) [**E**]
Firenze, Biblioteca Medicea Laurenziana, ms. Plut. 87.12 (XII sec.) [**Ab**]

Edizioni del testo greco
W. D. Ross (ed.) (1924) *Aristotle's Metaphysics.* Oxford: Oxford University Press.
W. Jaeger (ed.) (1957) *Aristotelis Metaphysica.* Oxford: Oxford University Press.

Fonti latine
Città del Vaticano, Biblioteca Apostolica Vaticana (BAV), ms. Vat. lat. 2080 (XIV sec.) [**V**]
Paris, Bibliothèque nationale de France, ms. Par. lat. 15453 (XIII sec.) [**P**]
Aristoteles, *Metaphysica cum commentariis Averrois*, Laurentius Canozius; impens. Johannis Philippi Aureliani et fratrum, Patavii 1473 (ISTC ia01005000; USTC 997527) [**C**]

Fonti arabe
Averroes, Tafsīr mā baʿd al-ṭabīʿat, éd. Maurice Bouyges, Beyrouth, Dar el-Machreq éditeurs, 1967-1973 [**B**]

Testo di riferimento
Aristotelis Opera cum Averrois commentariis, vol. VIII*, Aristotelis Metaphysicorum Libri XIIII.* Venetiis, apud Juntas, 1562 (USTC 810959).

4. Testo e collazione: Aristotelis Metaphysicorum liber VI

(*Venetiis, apud Juntas,* 1562, ff. 143v-152r; cfr. *ed. apud Juntas*, 1552, ff. 68r-71v.)

Collazione effettuata sui seguenti testimoni: Città del Vaticano, Biblioteca Apostolica Vaticana, ms. Vat. lat. 2080 (XIV sec.) [V], ff. 84va-89vb; Paris, Bibliothèque nationale de France, ms. lat. 15453 (XIII sec.) [P], ff. 303ra-306rb; Aristoteles, *Metaphysica cum commentariis Averrois*, Laurentius Canozius, Patavii, 1473 [C], ff. 175-185.

Il testo riproduce l'edizione *apud Junctas* del 1562. L'apparato è articolato su due livelli: il primo registra le varianti dei testimoni latini P, V e C; il secondo comprende le note filologiche dedicate al confronto con la tradizione araba e con i principali testimoni greci.

T1[1025b3-1025b28] 143 [L] Manifestum est, quod principia [1025b3], et causæ entium sunt quæsita, secundum quod sunt entia simpliciter. Aliqua enim est causa sanitatis, et infirmitatis. et res **exercitabiles**[11] habent principia, et elementa, et causas. et universaliter omnis scientia cogitativa habet principia,[12] aut **[M]** secundum finem perscrutationis, aut secundum perscrutationem simplicem. Et quia unaquæque istarum continet aliquod ens,[13] et aliquod genus [1025b8], ideo utitur illo, et non **144[A]** utitur, et quærit ens universale, neque secundum **est** ens, neque aliqua earum perscrutatur **per quod est** omnino: sed quædam secundum **hanc intentionem** affirmat quod est **sensu**, et quædam affirmat secundum positionem,[14] et secundum

[11] **143[L]** exercitabiles] ex(er)citables **V || 144[A]** est] quod est **V C ||** per quod est] de eo, quod est secundum quod est **V** : secundum quod est **P ||** hanc intentionem] intentionem hanc **V ||** sensu] in sensu **V**.

[12] 1025b6-7 πᾶσα ἐπιστήμη διανοητικὴ ἢ μετέχουσά τι διανοίας περὶ αἰτίας καὶ ἀρχὰς ἐστιν: *omnis scientia cogitativa habet principia* (*om.* μετέχουσά τι διανοίας περὶ αἰτίας). A differenza del latino, il testo arabo conserva il passo per intero. Cfr. **697.8 B**.

[13] 1025b8 La lezione arabo-latina, "*aliquod ens*", converge sulla *lectio facilior* di **Ab**, ὄν (ἕν **JE**). Cfr. **697.10 B**.

[14] **144[A]** continetur] continentur **V** || **[B]** si non] si non est **V ||** ideo] similiter etiam **V**: similiter et **P** similiter et enim **C ||** aut] ut **V ||** cogitatione] cognicione **V P ||** continet] continens **V** || enim *om.* **V P C ||** [C] ars] pars **V** || voluntatum] voluntarium **V ||** fuit]

hunc modum demonstrant, et declarant quæ sunt per se generis, sub quo **continetur**, aut necessario, aut facilius [1025b13]. Et ideo manifestum est ex sequentibus, quod substantia non **[B]** habet demonstrationem, et **si non** cuius est, sed aliam significationem quoquo modo. Et **ideo** non narratur omnino, si genus. quo utitur, est, **aut** si non est. in una enim **cogitatione** declaratur quid sit, et utrum sit [1025b18]. Et, cum scientia Naturalis est etiam alicuius generis entis (**continet enim** substantiam, in qua est principium motus, et quietis) manifestum est, quod non est activa, neque artificialis. Principium **[C]** enim rerum activarum est in agente, aut intellectus, aut **ars**, aut aliqua virtus [1025b23]. et principium artis est in artibus, scilicet voluntas. artificiatum enim et **voluntatum fuit** idem. Omnis **igitur cogitatio** agens et speculans[15] habet aliquam consyderationem. et **ipsa perscrutatur** de ente **quod** impossibile est moveri,[16] et de substantia, quæ in maiori parte **est** quasi definitio non abstracta [1025b28].

T2 [1025b33-1026a23] 145 [G] Et oportet **nos**[17]non ignorare illud, quod significat aliquid, quid **sit** secundum essentiam et definitionem, qualiter est, **quasi** quærere absque hoc, est facere nihil. **Illa** autem, quæ **[H]** determinant et significant quid, quædam sunt **sicut simus**, et quædam sicut profundum. et **differentia etiam est**, quia quædam **accipiuntur** cum materia, profundum autem non. simus enim est profundum in naso [1025b33]: profunditas

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sunt **V C** : est **P** || igitur] ergo **V C** ||cogitatio] cognicio **V P** || ipsa perscrutatur] ista speculatur**V PC** || quod] quod non **V** || est] et **V.**

[15] 1025b25 ἀπᾶσα διάνοια ἢ πρακτικὴ ἢ ποιητικὴ ἢ θεωρητική (*scil.* ἐστὶν): *Omnis igitur cogitatio agens et speculans* [...] La sintassi originaria di questa classificazione dei saperi, espressa in greco da una stringa di parti nominali legate da una copula sottintesa, non resta trasparente nel passaggio attraverso l'arabo. Il senso ne risulta alterato; manca inoltre nel testo latino la menzione della conoscenza produttrice o poietica (ποιητική).

[16] 1025b26-27 ἡ φυσικὴ θεωρητική τις ἂν εἴη, ἀλλὰ θεωρητικὴ περὶ τοιοῦτον ἐστι δυνατὸν κινεῖσθαι: *Impossibile est moveri*. Il testo latino segue fedelmente l'arabo (**699.2 B**) rispetto al greco. La differenza consiste nella presenza della negazione (*Impossibile est moveri*/ἐστι δυνατὸν κινεῖσθαι). Bessarione aveva già notato questa differenza. Cfr. Bessarione *apud Junctas* 1562, f. 145r: "[...] *Addito illo adverbio, non, tunc poterimus intelligere ex eo omnia, de quibus considerat scientia Naturalis. Sed in omnibus libris, a quibus correximus istum librum, quem glosamus, invenimus sine non*".

[17] **145[G]** nos *om.* **V P C** || sit*om.* **V** || quasi] quia **V** || Illa] Eorum **V P C** || **[H]** sicut simus] sicut, sicut scimus **P** || differentia etiam est] differunt **V P C** || accipiuntur] accipitur **V P C** || manus] nasus **V P** || nasus] manus **V P** || enim] autem **V** || **[I]** quid] quid quod **P** || enim] enim in scientia **V, P ;** enim scientia **C** || forma] anima **V P** || non] *om.* **P** : non est **C** || speculativarum] speculatarum **V** || manifestum non] modo naturalis **P**.

autem est sine materia sensibili. Et omnia naturalia dicuntur modo simili illi, quo dicitur simus, ut **manus**, et oculus, et **nasus**, et caro, et os, et totum animal: et folia, et radices, et tota planta. definitio **enim** non fit **[I]** in aliquo istorum sine motu.[18] manifestum est igitur, quod in rebus naturalibus quæritur **quid** sit materia, et determinatur, et quare sit etiam [1026a4]. Naturalis **enim** habet consyderare de aliqua **forma**, scilicet illa, quæ est **non** sine materia. Manifestum est igitur ex hoc, quod scientia Naturalis est aliqua scientiarum speculativarum. Et etiam scientia mathematica est scientiarum **speculativarum**. sed **manifestum non** est, si scientia rerum **[K]** quæ non moventur, est abstracta[19] etiam. et si sit manifestum [1026a9], quod quædam Mathematica non moventur, et sunt abstracta.

Et si aliquid sit sempiternum non mobile, **aut**[20] abstractum etiam, manifestum est **etiam**, **quod** cognitio eius erit **in aliqua scientia speculativa alia a Naturali**. **scientia enim Naturalis est rerum** mobilium. neque Mathematica, sed illa, quæ est ante omnes istas. scientia enim Naturalis est rerum inseparabilium, sed non immobilium. Et Mathematicarum quædam [1026a14] sunt rerum **[L] immobilium**, sed non videntur abstractæ, sed quasi in materia. Prima autem **scientia erit** rerum **abstractarum**, **et quæ non moventur**. Unde **necesse** ut omnia[21] sint æterna, et maxime ista, quoniam

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[18] 1026a3 οὐθενὸς γὰρ ἄνευ κινήσεως ὁ λόγος αὐτῶν, ἀλλ᾽ ἀεὶ ἔχει ὕλην, δῆλον πῶς δεῖ ἐν τοῖς φυσικοῖς τὸ τί ἐστι ζητεῖν καὶ ὁρίζεσθαι : *definitio enim non fit in aliquo istorum sine motu*, manifestum est igitur, quod in rebus naturalibus quæritur quid sit materia, et determinatur, Nella versione arabo-latina (cfr. nel testo arabo **706.5 B**), il riferimento alla materia manca nella prima frase (*om.* ἀλλ᾽ ἀεὶ ἔχει ὕλην) e risulta spostato nella seconda, in modo da costituire il soggetto della subordinatainterrogativa "*quid sit materia*" (cfr. gr. 1026a4 τὸ τί ἐστι).

[19] 1026a7-8 ἀλλ᾽ ἔστι καὶ ἡ μαθηματικὴ θεωρητική: ἀλλ᾽εἰ ἀκινήτων καὶ χωριστῶν ἐστί, νῦν ἄδηλον: *Et etiam scientia mathematica est scientiarum speculativarum. sed manifestum non est, si scientia rerum quæ non moventur, est abstracta.* Il predicato si riferisce alla scienza matematica. Il termine χωριστῶν nella tradizione greca è attribuito agli oggetti di indagine della matematica, enti separabili soltanto per astrazione (cfr. *Metaph*. M 3), mentre nella versione latina diventa predicato della stessa scienza (*abstracta*). L'arabo corrisponde al greco più direttamente; cfr. 1026a7 χωριστῶν con مفارقة **706.10 B**.

[20] **145[K]** aut] et **V P C ||** quod etiam] etiam *om.* **V** : quod etiam *corr. in* etiam quod **P ||** in aliqua scientia speculativa alia naturali scientia enim naturalis est rerum *in mg.* **P || [L]** immobilium] immobilium deinde sive separabilium *add. in mg.* **P ||** scientia erit] scientia est. Erit **V ||** abstractarum et quae non moventur] separabilium et immobilium etiam **V** : immobilium etiam **P** : est immobilium separabilium **C ||** necesse] est necesse **V** : necesse est**P C ||** apparentium] apparentium et **V P ||** tres] tres scilicet **V ||** Naturalis] et Naturalis **V**.

[21] 1026a16-17 πάντα μὲν τὰ αἴτια ἀΐδια : *omnia sint aeterna*. Facendo riferimento al periodo precedente: "*Prima autem scientia erit rerum abstractarum, et quae non moventur*", la versione arabo-latina (cfr. nel testo arabo **707.4 B**) lascia implicito il soggetto "*causae*".

ista sunt causæ rerum **apparentium** ex divinis.[22] Modi igitur Philosophiæ essentiales sunt **tres**, Mathematicus, **Naturalis**, et Divinus [1026a19]. Nullus enim **[M]** ignorat quod, si divinus est, quod est in tali natura. et scientia nobilis debet[23] esse nobilis generis. aliæ enim scientiæ speculativæ sunt valde bonæ. sed ista scientia est melior[24] omnibus scientiis speculativis.

T3 [1026a24-31] 146 [K] Et dignum est quærere utrum prima Philosophia sit universalis [1026a24], aut alicuius generis, aut unius naturae. Non enim est una species, **neque**[25] in scientiis mathematicis etiam, sed Geometria, **et** Astrologia **[L]** sunt alicuius naturæ, et scientia universalis est communis omnibus. Si igitur non fuerit substantia aliqua alia a substantiis **existentibus natura**, tunc **prima scientia** est Naturalis [1026a29]. Et si aliqua substantia immobilis fuerit, illa erit primum, et scientia eius erit[26] prima Philosophia, universalis etiam.

Summa secunda.
[B] [Declarantur quædam entis species, quae ab hac scientia secluduntur.]
[Dari ens per accidens, quidque illud sit. Cap. 1]

T4 [1026a31-1026b24] 147 [F] Et quia habet considerationem de ente, secundum quod est ens, et quid sit.[27] Sed **cum** ens, quod **dicitur** simpliciter,

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[22] 1026a18 αἴτια τοῖς φανεροῖς τῶν θείων: *causae rerum apparentium ex divinis.* Lezione condivisa dai manoscritti **E** ed **Ab**; in entrambi compare τῶν θείων, mentre il testimone **J** riporta αἰσθητῶν.
[23] 1026a21-22 καὶ τὴν τιμιωτάτην δεῖ περὶ τὸ τιμιώτατον γένος εἶναι: *et scientia nobilis debet esse nobilis generis.* La lezione si allinea con i testimoni **JE**, "*debet*" corrisponde a δεῖ. In luogo di quest'ultimo termine, nel ms. **Ab** compare ἀεὶ.
[24] 1026a22-23: la forma comparativa della versione arabo-latina, *melior omnibus scientiis*, conferma il testo di **JE**,τῶν ἄλλων ἐπιστημῶν αἱρετώτεραι vs. **Ab**,τῶν ἄλλων ἐπιστημῶν αἱρετώταται.
[25] **146[K]** neque *om.* **V** || et] aut **C** || **[L]** existentibus] existetibus **V** || natura] a natura **V C** || prima scientia] prima scientia scientia **P**.
[26] 1026a30 καὶ φιλοσοφία πρώτη: *Scientia eius erit* add. lat. (cfr. **713.7 B**). Il greco presenta un costrutto notoriamente sottodeterminato e di incerto intendimento; la versione arabo-latina lo integra con il soggetto, 'la scienza che se ne occupa', precisamente in quel modo che serve per dissolvere i dubbi. Nulla impedisce di pensare che l'arabo qui restituisca una frazione di testo poi perduta nella tradizione greca. Oppure integrerà per plausibile congettura.
[27] **147[F]** cum *om.* **V P C ||** dicitur *om.* **V ||** dicitur] dicitur per accidens **V ||** ab istis modis] secundum modum**P || [G]** sicut] verbi gratia **V P C ||** et quando *om.* **V ||** signum eius est] hius est signum **C**.

dicitur multis modis, quorum unus, ut diximus, dicitur per accidens [1026a34], et unus **dicitur** quasi verum, et non ens quasi falsum. et aliis modis **ab istis modis [G]** figurarum praedicamentorum, **sicut** hoc,[28] et quantum, et ubi, **et quando**: et etiam praeter omnia ista quod dicitur potentia et actu [1026b2]: et cum ens dicatur multis modis, dicamus primo de illo, quod dicitur per accidens. nulla enim scientia speculativa utitur tali modo. Et **signum eius est**, quod nulla scientia perscrutatur de hoc, neque activa, neque artificialis.[29] Aedificator enim non facit omnia, quae accidunt cum artificio **[H]** domus, quae sunt infinita [1026b7]. non enim facit, ut domus adiuvet uni, et **noceat** alii, et universaliter ut **sit** aliis modis, qui non sunt facti a nobis. Et similiter Geometria etiam non consyderat de rebus, quae accidunt figuris tali modo, neque si triangulus alius, et triangulus habet duos rectos angulos alios [1026b12]. et **si** conveniant in **definitione**. accidens enim **est** quasi aliquod nomen tantum. Et ideo non malefecit Plato quoquo **[I]** modo, quando ordinavit Sophisticum sub eo, quod non est. sermones enim **Sophistici** in maiori parte sunt in eo quod **conveniunt** accidenti. sicut illud, quod dicitur quod est omnia, et non est. musicus enim et grammaticus sunt idem [1026b17], et nauta et musicus sunt **idem,**[30] et omne, quod est **non** secundum quod dicitur de eo. sicut ille, **qui** fuit musicus, **et fit** grammaticus: aut ille, qui fuit grammaticus, et fit musicus: et omnes alii sermones **[K]** similes istis. Accidens enim videtur prope illud, quod non est quoquo modo. Et hoc manifestum **est** ex sermonibus exemplaribus [1026b22]. res enim, quæ sunt alio modo, habent generationem et corruptionem: quæ autem sunt modo accidentali, non habent hoc.

T5 [1026b24-1027a19] Sed tamen loquamur **148[M] de accidente**, secundum quod possibile est in sua natura, et qua de causa sit. et videtur quod cum hoc declarabitur quare non habet scientiam fixam [1026b27]. **Et cum**

[28] 1026a36-37 οἷον τὸ μὲν τί, τὸ δὲ ποιόν, τὸ δὲ ποσόν, τὸ δὲ πού, τὸ δὲ ποτέ: *sicut hoc, et quantum, et ubi, et quando*. Nei manoscritti latini si omette τὸ δὲ ποιόν, *quale*. L'elenco delle categorie non è pertanto lo stesso.

[29] 1026b5 οὔτε πρακτικῇ οὔτε ποιητικῇ οὔτε θεωρητικῇ: *neque activa, neque artificialis* (*om.* θεωρητικῇ). Nella frase, la tradizione latina omette il riferimento alla scienza teoretica, "*scientia speculativa*". Cfr. *supra*, n. 15.

[30] 1026b17-18 καὶ μουσικὸς Κορίσκος καὶ Κορίσκος: *et nauta et musicus sunt idem*. Già nella versione araba, come poi in quella latina, il nome proprio usato come esempio è sostituito da "*nauta*" (cfr. ar. **B 716.3-4** مجذف). Il latino semplifica inoltre la sintassi, che l'arabo mantiene parallela al testo greco originale.

in rebus sunt quædam, quæ semper sunt in eadem dispositione, et sunt **necessariæ** etiam, non illa, quæ dicuntur violente, sed quæ dicuntur de illis, quæ impossibile est ut sint alio modo, et quædam non sunt **necessaria neque semper**, **149[A]** sed **sunt** in maiori parte, et hoc est initium, et causa essendi per accidens. **Illud enim**, **quod non est semper**, neque in maiori parte [1026b32], vocetur accidens. sicut pluvia apud ascensum canis.[32] hoc enim accidit, quia **nunquam** fuit, neque in maiori parte. et accidit ut homo fuit albus, sed non semper, neque in maiori parte [1026b37].[33] et Ædificator **et** Medicus curat, non in eo quod ædificator, sed per accidens.[34] et Cocus **[B]** potest facere ferculum utile, **sed** non est scientiæ coquendi, et ideo dicitur quod **accidit**. Secundum igitur hanc dispositionem **forte** virtutes agentes erunt aliæ [1027a5-6],[35] et ista non habent artem, neque virtutem terminatam. causa enim eorum, quæ sunt aut erunt per accidens, est etiam per accidens. Et cum non omnia sunt necessario semper, sed pluries, et in maiori parte [1027a10], tunc **necesse** ut illud, quod est per **[C]** accidens, sit sicut

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[31] **148[M]** de accidente] accidenti **V** || Et cum] quum **C** || necessariæ] necessario **V P** || necessaria] necessariæ **P** || neque semper] *om.* **V** || **149[A]** sunt] *om.* **P** || illud enim] *om.* **V P C** || quod non est semper] quod enim est non semper **V P C** || nunquam] nunquam non semper **V** || et *om.* **V** || **[B]** sed] sed hoc **P** || accidit] accidit hoc **V P C** || forte] fortem **V**.

[32] 1026b33-34 οἷον ἐπὶ κυνὶ ἂν χειμὼν γένηται καὶ ψῦχος, τοῦτο συμβῆναί φαμεν, ἀλλ᾽ οὐκ ἂν πνῖγος καὶ ἀλέα: *sicut pluvia apud ascensum canis* (*om.* ἀλλ᾽ οὐκ ἂν πνῖγος καὶ ἀλέα). Il freddo che si verifica durante il periodo abitualmente più caldo dell'anno, la canicola (chiamata così perché durante esso il Sole sorge insieme a Sirio, la stella più luminosa della costellazione del Cane) rappresenta un esempio paradigmatico di evento accidentale, a cui si contrappongono le abituali afa e calura (ἀλλ᾽ οὐκ ἂν πνῖγος καὶ ἀλέα). Il testo latino rende inoltre con *pluvia* i termini greci inverno (χειμὼν) e freddo (ψῦχος). Mancando il controesempio del greco, nel testo latino anche l'esempio seguente diventa oscuro.

[33] 1026b35-37 καὶ τὸν ἄνθρωπον λευκὸν εἶναι συμβέβηκεν (οὔτε γὰρ ἀεὶ οὔθ᾽ ὡς ἐπὶ τὸ πολύ) ζῷον δ᾽ οὐ κατὰ συμβεβηκός : *et accidit ut homo fuit albus, sed non semper, neque in maiori parte* (*om.* ζῷον δ᾽ οὐ κατὰ συμβεβηκός). Poiché nella frase precedente manca il controesempio, il contrasto tra regolarità ed accidente viene meno.

[34] 1026b37-1027a2 καὶ τὸ τὸν οἰκοδόμον ὑγίειαν ποιῆσαι συμβεβηκός, ὅτι οὐ πέφυκε τοῦτο ποιεῖν οἰκοδόμος ἀλλὰ ἰατρός, ἀλλὰ συνέβη ἰατρὸν εἶναι τὸν οἰκοδόμον: *et Ædificator et Medicus curat, non in eo quod ædificator, sed per accidens*. Il latino compendia fortemente il fraseggio greco; il rapporto concettuale tra l'attività del costruttore e quella del medico resta riconoscibile, benché la sintassi risulti alterata.

[35] 1027a5-6 ἄλλαι γὰρ ἐνίοτε δυνάμεις εἰσὶν αἱ ποιητικαί: *virtutes agentes erunt aliae*. "*Aliae*" corrisponde ad ἄλλαι al nominativo (mss. **J**, **Ab)**, mentre il manoscritto **E** riporta ἄλλων.

album. non enim semper est musicus, neque in maiori parte.[36] et **cum sit** in aliquo tempore, **est** per accidens. et si non, omnia erunt necessaria. et tunc accidens habebit **aliquam** causam **in maiori parte**, **et oportet accipere hoc primo possibilitatem alio modo**. Et **oportet** primo, si **aliud non** fuerit [1027a15] Album in Græco. **principium eorum æternum**. **de istis perscrutabitur post**.

T6 [1027a19-26] Quoniam autem accidens non **149 [L]** habet scientiam permanentem manifestum est [1027a20]. Omnis enim scientia permanens aut est illius quod est semper, aut illius, quod est in maiori parte. quomodo enim potest doceri, aut addisci, quod non est ita? quoniam quod determinatur **oportet ut** sit semper, aut in maiori parte. verbi gratia quod syrupus talis adiuvat febricitantes in maiori parte. Et impossibile est ut **aliud** dicatur in alio tempore [1027a25].[37] ut novitas mensis, quæ est semper, aut in maiori parte.[38]

T7 [1027a26-1027b15] 150 [E] Dictum est igitur quid est accidens, et **quid** causa accidentis. et quod nullam habet scientiam permanentem. Quoniam autem principia, et causæ **sunt** generabilia et corruptibilia, etiam absque eo quod **generentur** aut **corrumpantur** [1027a30], manifestum est. Quoniam, si **[F]** hoc non fuerit, tunc omnia erunt necessaria. quoniam, si

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[36] **149[B]** necesse] necesse est **V** || **[C]** cum sit] si est **V P C** || est] erit **V P** : erunt **C** || aliquam] aliam **V P** || in maiori parte] a possibilitate alio modo **P** || et oportet accipere hoc primo] *om.* **V** || possibilitatem alio modo] et a possibilitate alio modo **V** : et possibilitate alio modo **C** || oportet] oportet illud inveniri **V P C** || aliud non] aliud non fuit **V** : aliud non fuerit**P** || album in Graeco] album nigredo **C** || principium eorum] principium enim **V** || principium...post *om.* **P** || **149[L]** oportet ut] oportet aut **V P C** || aliud] illud **V**.

[37] **150[E]** quid] quid est **V P** || sunt *om.* **P** || generentur] generatur **V P C** || corrumpantur] corrumpatur **V P C** || **[F]** illud, quod generatur et corrumpitur] illa quod generantur et corrumpuntur **V P C** || habuerit] habuerunt **V, P** || erit] erunt **V, P** || necessarius] necessario **V C** || hoc enim erit] enim erit hoc **V** : erit cum hoc **P :** hoc erit enim **C** || si] si effectus **V** || et hoc, si fuerit aliquid] et fuerit si hoc erit aliud **V** : si fuerit aliud **P** || **[G]** Socrates] secundo **V** || aliquis] alicuius **V** || **[H]** essentiam existentem] existentem essentiam **V P C**.

[38] 1027a25-26 οἷον νουμηνίᾳ· ἢ γὰρ ἀεὶ ἢ ὡς ἐπὶ τὸ πολὺ καὶ τὸ τῇ νουμηνίᾳ· τὸ δὲ συμβεβηκός ἐστι παρὰ ταῦτα. *ut novitas mensis, quæ est semper, aut in maiori parte* (*om.* τὸ δὲ συμβεβηκός ἐστι παρὰ ταῦτα). Aristotele sta facendo un esempio sull'efficacia dell'idromele: afferma infatti che le sue proprietà curative vengono meno durante la luna nuova. Aristotele distingue il caso particolare soggetto pur sempre a una regola – il novilunio – dall'evento propriamente accidentale (τὸ δὲ συμβεβηκός ἐστι παρὰ ταῦτα). Nella versione latina manca quest'ultima clausola.

illud, quod generatur et corrumpitur, non **habuerit** aliquam causam modo accidentali, tunc **erit necessarius**. Sicut dicimus, utrum erit hoc aut non erit? **hoc enim erit**, **si** erit hoc, et si non, non. **et hoc, si fuerit aliquid,**[39] et secundum hanc dispositionem. et manifestum est, quod semper diminuitur tempus ex tempore finito. et similiter pervenit ad illud, quod est in instanti [1027b1]. **[G]** sicut dicimus, quod si **Socrates** exierit, morietur aut infirmitate, aut violentia.[40] Et hoc erit, si aliud fuerit. et sic pervenietur ad illud, quod est instans, aut ad aliquid eorum, quæ fuerint. ut tale comestum inducit sitim. et hoc, si comederit calida. et hoc aut erit aut non. ergo morietur necessario [1027b6].[41] Et similiter, si **aliquis** ordinaverit, et dixerit illa, quæ iam facta sunt, sermo de eis erit talis, et **[H]** habent **essentiam existentem**. dico illa, quæ iam fuerint essentia eorum, **et cognitio eorum**, et generatio eorum.[42] **erunt igitur necessario** omnia generabilia, sicut mors vivi, quia iam præcessit. **fit enim idem**, sicut contraria sunt eadem, quia sunt eiusdem, sed non sine infirmitate, aut violentia, nisi hoc sit [1027b11]. Manifestum est igitur, quod **accedit** ad aliquod principium: et hoc non **accedit** ad aliud. et **accedet** ad **[I] illud**, quod comprehenditur casu, et non est causa motus omnino. Sed finis, qui est talis, erit ad principium habens qualitatem, et causam habentem qualitatem.

[G] Utrum ut ad materiam, an ut ad cuius gratia, an ut ad movens, maxime consyderandum est. De eo itaque, quod secundum accidens est, dimittatur: determinatum enim sufficienter est.

De ente vero, et falso: omittendumque esse ens per accidens, verumque ac falsum: ac de ente ut ens est consyderandas esse causas, ac principia.

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[39] 1027a34 τοῦτο δὲ ἐὰν ἄλλο: *si fuerit aliquid*: *si hoc erit aliud* **V:** *si fuerit aliud* **P**. La lezione dei manoscritti è più vicina al greco.

[40] 1027b1-2 ὥστε ὁδὶ ἀποθανεῖται νόσῳ ἢ βίᾳ, ἐὰν γε ἐξέλθῃ: τοῦτο δὲ ἐὰν διψήσῃ: *quod si Socrates exierit, morietur aut infirmitate, aut violentia* (*om.* τοῦτο δὲ ἐὰν διψήσῃ). Il passo è conservato dai testimoni **J** ed **E**, mentre manca nel ms. **Ab**. Il greco ὁδὶ è sostituito dal nome proprio *Socrates*.

[41] 1027b5-6 Nella tradizione arabo-latina l'esempio è compromesso, a causa dell'omissione della coordinata introdotta dalla disgiunzione: cfr. ὥστ' ἐξ ἀνάγκης ἀποθανεῖται ἢ οὐκ ἀποθανεῖται con *ergo morietur necessario*.

[42] **150[H]** et cognitio eorum *om.* **V ||** erunt igitur necessario] ergo erunt necessario **V P C ||** fit enim] et fit **V C** || idem] et sit idem **P ||** accedit] accipit **V P** : accepit **C ||** accedit] accipit **V P** : accepit **C ||** accedet] accipit **V P :** accepit **C || [I]** illud] aliud **V P C**.

T8 [1027b15-1028a6] 151 Et oportet nos perscrutari multum, utrum sit quasi perveniens **[L]** ad materiam, **aut ad aliud propter quid**, aut ad illud, cuius est motus [1027b15-16]. Dimittamus igitur loqui de **ente** accidentali: nam sufficit, quod determinatum est de **eo**. Et loquamur de vero **ente**, quod non est sicut falsum. est enim in **compositione et divisione**, et universaliter in divisione contradictorium [1027b20].[43] quia habet **affirmationem**, secundum quod est verum, et secundum quod est compositum habet **negationem** aliquam, et **[M]** secundum quod est divisum habet falsitatem istius divisionis, quæ est contradictoria. Quomodo autem **accidit** intelligi simul, et prius, habet alium sermonem. et dico simul et prius, ne aliquid sit post aliquid, sed ut sit idem. **Verum enim et falsum non** sunt [1027b25] in rebus, sicut bonum et malum ut verum sit sicut bonum, et falsum sicut malum, sed sunt in **152 [A] cognitione.**[44] et nulla **cognitio** est de simplicibus, aut de illo quod est. Omnia igitur **perscrutanda** de **ente**, quod est huiusmodi, et de eo, quod non est, dicenda sunt post. Et cum in **cognitione** est aut compositio, aut divisio [1027b30],[45] non in rebus, quod est aliud secundum hunc modum: ex rebus **enim**, quæ sunt in rei veritate,[46] est illud quod significat aut quid, aut quale,

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[43] **151[L]** aut ad aliud propter quid *om.* **V** || ente] enti **V** || eo] eis **V P C** || ente] enti **V P** || in compositione] in compositione et divisione **VC** : in compositione et diminutione **P** || et] et utiliter in divisione **V** : et universaliter in diminutione **P** : et universaliter in divisione **C** || affirmationem] affirmativam **V P C** || negationem] negacionem **V** : negativam **P** || **[M]**accidit] contingit **V P C** || Verum enim et falsum] falsum enim et verum **V P C** || non *om.* **C** || **152[A]** cognitione] cogitacione **V** : cogitatione **C** || cognitio] cogitacio **V :** cogitatio **P C** || perscrutanda] perscrutanda sunt **V P C** || cognitione] cogitacione **V** : cogitatione **P C** || enim *om.* **P**.

[44] 1027b18-20 τὸ δὲ ὡς ἀληθὲς ὄν, καὶ μὴ ὂν ὡς ψεῦδος, ἐπειδὴ παρὰ σύνθεσίν ἐστι καὶ διαίρεσιν, τὸ δὲ σύνολον περὶ μερισμὸν ἀντιφάσεως. La resa latina, *et loquamur de vero ente, quod non est sicut falsum. est enim in compositione et divisione contradictoriorum* è leggermente compendiata e parafrastica (anticipa la nozione dei contraddittori, '*contradictoriorum*', ed omette τὸ δὲ σύνολον περὶ μερισμὸν ἀντιφάσεως). Cfr. Berti (2015) pp. 184-6.

[45] 1027b29-30 *Aut compositio, aut divisio.* Latino ed arabo (cfr. 737.7 B) si accordano con **J** ed **E**: ἢ συμπλοκή ἐστιν ἢ διαίρεσις, lezione che comporta una disgiunzione fra i due sostantivi, mentre gli editori Bekker, Ross e Jaeger seguono **Ab**: ἡ συμπλοκή ἐστιν καὶ ἡ διαίρεσις. La testimonianza del latino *apud Junctas* aiuta a confermare una nuova costituzione del testo sulla base dello stemma che vede derivare il consensus dei vetustissimi **J** ed **E** direttamente dall'archetipo. Solo se tali indagini rinvenissero in futuro errori separativi in **J** e **E** rispetto alla tradizione arabo-latina si potrebbe pensare che quest'ultima derivi da un archetipo diverso.

[46] 1027b30-31. Il greco qui comporta desinenze diverse fra **J** ed **E** (κυρίων) e **Ab** (κυρίως, lezione adottata da Jaeger e Ross). Il significato è quasi invariato, ed il testo latino (*in rei veritate*) non consente di dirimere la divergenza.

aut quantum, aut quod copulatur, cum alio, et cogitatio dividit illud: dimittamus **ergo** ens, quod est quasi accidens, et quod est quasi verum. causa enim unius eorum non habet **definitionem**, et causa alterius est **cognitio. et** utrumque est in genere diminuto [1028a1] generum entis, et non sunt ex eis, quæ significant esse entis. Et ideo dimittatur, et **perscrutetur. Album in exemplari**.[47] Iam **declaravimus**, ubi diximus quod unaquæque rerum dicitur multis **modis**. quoddam enim significat quid [1028a6].[48] **[C] Album in exemplari.**[49]

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[47] 1028a2-4 διὸ ταῦτα μὲν ἀφείσθω, σκεπτέον δὲ τοῦ ὄντος αὐτοῦ τὰ αἴτια καὶ τὰς ἀρχὰς ἢ ὄν: *Et ideo dimittatur, et perscrutetur* (in corrispondenza della segnalazione di lacuna, 'Album in exemplari', manca: τοῦ ὄντος αὐτοῦ τὰ αἴτια καὶ τὰς ἀρχὰς ἢ ὄν).

[48] Il testo latino conferma le ultime righe dei due manoscritti **V** e **P.** I due codici conservano infatti lezioni corrispondenti ai testimoni greci **J** ed **E (vs. Ab)**, a 1028a5-6: ὅτι πολλαχῶς λέγεται τὸ ὄν. σημαίνει γὰρ τὸ μὲν τί ἐστιν [*quod ens dicitur multis modis. quoddam enim significat quid*]. Pur sulla base dello stesso testo, la versione *apud Junctas* presenta una lacuna in omoteleuto, che ha prodotto una

[49] **152[A]** quod *om.* **P ||** cogitatio] cogitacio **V :** cognitio **C || [B]** ergo] igitur **V P C ||** definitionem] diffinitionem **V P C ||** cognitio] cogitacio **V** : cogitatio **P ||** et *om.* **V ||** perscrutetur] perscrutemur **V P ||** Album in exemplari] Album in Romano **V P :** Album **C ||** declaravimus] determinavimus **P ||** multis modis. quoddam enim significat quid] multis modis. quod ens dicitur multis modis, quoddam enim significat quid **V P || [C]** Album in exemplari] Album in Romano **V** : In Romano **P** : Album **C**.

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MONICA UGAGLIA

POTENZA E ATTO
L'INFINITO IN ARISTOTELE E LEIBNIZ

Abstract

Leibniz articulates a peculiar conception of infinity, one that is simultaneously potential and actual. How can such a notion be coherent? This is possible insofar as the potential aspect corresponds to Aristotle's notion of potential infinity (potentiality A), understood as processual or syncategorematic. The actual aspect, however, refers to a different kind of potentiality (potentiality L), which Leibniz attributes to the infinite in addition to potentiality A.

Keywords

Aristotle, Leibniz, Infinite, Potentiality, Actuality

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English Title

Potentiality and Actuality:
The Infinite in Aristotle and Leibniz

Introduzione

Nella fase matura della sua elaborazione filosofica Leibniz perviene ad una concezione piuttosto originale della composizione degli oggetti fisici. Come è noto, per Leibniz gli oggetti fisici non costituiscono la realtà – che è prerogativa delle sostanze metafisiche – ma si limitano ad "esprimerla", in modo imperfetto. In questo contesto, il modo in cui un oggetto fisico può essere analizzato nelle sue parti ultime deve "esprimere" il modo in cui una sostanza metafisica risulta dalle sue componenti ultime, e cioè dalle sostanze individuali. In particolare, deve esprimere il fatto che queste componenti sono infinite in atto.

Leibniz descrive questo stato di cose affermando che "la materia è divisa in atto in parti più piccole di qualsiasi grandezza data, ovvero che non esiste parte che non sia in atto suddivisa in altre"[1] e che "sebbene tali divisioni procedano all'infinito, tuttavia tutto risulta da certi elementi primi costitutivi, o unità reali, che però sono in numero infinito".[2]

In quanto segue mi occuperò di queste affermazioni di Leibniz sulla divisibilità dei corpi fisici e della nozione di infinito che ne consegue: un infinito che tiene insieme aspetti di potenzialità "sebbene tali divisioni procedano all'infinito" e di attualità "tuttavia tutto risulta da certi elementi primi costitutivi, o unità reali". Mostrerò in particolare come, nel contesto della fisica di Leibniz, questa coesistenza di potenzialità ed attualità non porti a contraddizione, come accadrebbe invece se tentassimo di tradurre il concetto in termini matematici. In tal caso, infatti, come afferma lo stesso Leibniz, "ci cacceremmo nel labirinto del continuo, e in contraddizioni inestricabili".[3]

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[1] "Statuo materiam actu fractam esse in partes quavis data minores, seu nullam esse partem, quae non actu in alias sit subdivisa diversos motus exercentes" (Leibniz a Des Bosses 11-17 Marzo 1706). Si veda *infra*, la sezione 2.2.

[2] "et licet eae divisiones procedant in infinitum, non ideo tamen minus omnia resultant ex ceteris primis constitutivis seu unitatibus realibus, sed numero infinitis" (Leibniz a De Volder, 30 giugno 1704). Si veda *infra*, la sezione 2.2.

[3] "Nos vero idealia cum substantiis realibus confundentes, dum in possibilium ordine partes actuales, et in actualium aggregato partes indeterminatas quaerimus, in labyrinthum continui contradictionesque inexplicabiles nos ipsi induimus" (Leibniz a De Volder, 19 gennaio 1706). Si veda *infra*, la sezione 2.3.

Comincerò con l'analisi della prima prerogativa dell'infinito fisico di Leibniz, e cioè la potenzialità associata alla divisione infinita, di cui metterò in evidenza il carattere processuale, in ultima analisi riconducibile alla definizione aristotelica di infinito. Chiamerò questa forma di potenzialità, quella che per Leibniz caratterizza l'infinito sincategorematico, potenzialità A o iteratività.

Nella sezione 2 mi concentrerò sulla seconda caratteristica che emerge per Leibniz dalla divisione infinita dei corpi fisici, e cioè l'attualità delle parti. Mostrerò come questa attualità non sia da intendersi in relazione alla potenzialità A, bensì ad una seconda forma di potenzialità, che denominerò per convenienza potenzialità L, che Leibniz riconosce nella divisione infinita del continuo. A differenza della potenzialità A, che è per definizione incompatibile con qualsiasi idea di attualità, la potenzialità L può essere associata ad una particolare forma di attualità, che denominerò attualità L, senza che ciò generi contraddizione; almeno non dal punto di vista di Leibniz.

Servendomi della distinzione tra potenzialità A e potenzialità L giustificherò infine la presenza, nel sistema leibniziano, di due differenti forme di infinito potenziale: l'infinito del continuo matematico, che è al contempo sincategorematico e potenziale (potenzialità A e potenzialità L), e l'infinito dei corpi fisici, che può essere definito al contempo sincategorematico e attuale (potenzialità A e attualità L).

1. Potenza senza atto: l'infinito in Aristotele

Nei suoi testi Aristotele nega in modo sistematico l'esistenza di qualsiasi forma di infinito in atto. L'universo, cioè il complesso di tutto ciò che esiste, risulta per lo Stagirita finito sia in grandezza sia in molteplicità: è una sfera

di raggio finito, che contiene un numero finito di corpi. Nell'universo di Aristotele l'infinito non può dunque esistere, né come sostanza,[4] né come attributo di una sostanza.[5] Può tuttavia esistere, e di fatto esiste, come attributo di un processo. Che è come dire che esiste non in quanto è "qualcosa" ma in quanto "è in virtù di qualcosa", secondo la celebre definizione che troviamo nella *Fisica*:

A L'infinito esiste in questo modo, in virtù del fatto che [**A1**] si prenda via via (ἀεί) una cosa dopo l'altra; e [**A2**] cio che viene preso via via (ἀεί) è finito; ma [**A3**] è via via (ἀεί) diverso (*Ph*. III 6.206a27-29).

È evidente che non ci troviamo qui di fronte a una definizione aristotelica nel senso canonico, ma piuttosto ad una descrizione di tipo operativo. Aristotele non descrive un oggetto, bensì un'azione – l'azione del "prendere" – e la ripetizione indefinita di tale azione, segnalata con insistenza dall'avverbio *aei*. Ogni volta che si prende qualcosa (primo passo), c'è un'altra cosa da prendere (secondo passo), poi un'altra ancora (terzo passo), e così via (*aei*, passi successivi), senza che il processo giunga mai ad una conclusione.

L'esempio paradigmatico di infinito potenziale, al quale Aristotele riconduce ogni altra possibile manifestazione dell'infinito, è il continuo.[6] Nella *Fisica* il continuo è descritto come "infinitamente divisibile",[7] o, in ma-

[4] *Ph.* III 4.202b36-203a16; cfr. III 5.204a8-34; III 4.203a6-16; III 1.200b27. La lettura dell'infinito potenziale di Aristotele che presento in questa sezione è basata su alcuni miei lavori (Ugaglia 2009, 2012, 2018). Poiché riprendo qui e sviluppo in una prospettiva leibniziana solo gli aspetti principali della questione, rimando agli articoli citati il lettore interessato all'argomento in sé e alla sua contestualizzazione nel dibattito aristotelico contemporaneo.

[5] *Ph.* III 4.203a16-b3; cfr. III 5.204b4-206a7.

[6] Di fatto, non solo la divisione del continuo, ma qualsiasi dimostrazione matematica che impieghi procedimenti di iterazione infinita – come le sottrazioni reciproche, il metodo di esaustione, o le argomentazioni basate su limiti asintotici – può essere interpretata come un esempio di infinito potenziale nel senso aristotelico. Non sorprende pertanto che Aristotele formuli le sue definizioni e i suoi esempi servendosi di strutture logiche e terminologiche che potremmo definire algoritmiche, secondo una scansione che ricalca il modello delle procedure iterative della matematica. Ho studiato la questione in Ugaglia (2009) e (2018).

[7] *Ph.* III 1.200b18; I 2.185b10-11; VI 6.237a33; VI 8.239a22. È importante notare come questa non sia la definizione aristotelica del continuo: definire il continuo come infinitamente divisibile, o divisibile in sempre divisibili, renderebbe circolare la definizione di infi-

niera più operativa, come "divisibile in ciò che è via via divisibile" (*aei diaireton*).[8] Si consideri un segmento, o una linea fisica: esso è divisibile (primo passo), e ciò che si ottiene da questa divisione è ancora divisibile (secondo passo), e la nuova parte ottenuta è ancora divisibile (terzo passo), e così via (*aei*, passi successivi). È immediato verificare che siamo in presenza di tutte le richieste che Aristotele avanza nella sua definizione dell'infinito: [**A1**] ad ogni divisione segue una divisione; [**A2**] il risultato della divisione, e cioè i pezzi di segmento che vengono via via prodotti, è finito e [**A3**] via via diverso.

Notiamo che, pur applicandosi primariamente al processo, in questo caso al processo di divisione del segmento, l'attributo 'infinito' può essere riferito anche a ciò che viene via via prodotto dal processo, e cioè ai pezzi, via via più piccoli, in cui il segmento viene diviso. È quindi lecito affermare che le parti in cui un segmento può essere diviso sono potenzialmente infinite, ma quando lo si faccia è necessario tenere a mente il fatto che, propriamente parlando, quel che è infinito non sono le parti ma la procedura che consente di ottenere quelle parti. Le parti esistono, e sono infinite, solo nella misura in cui esiste, ed è infinito, il processo che le genera. Se si interrompe il processo di divisione, e questo vale a qualunque punto lo si interrompa, anche l'infinito viene meno. Una volta interrotto il processo, infatti, quel che resta è un insieme finito di pezzi, di grandezza finita [**A2**].

Lo stesso discorso vale per i numeri, anch'essi definiti da Aristotele a partire dalla divisione del continuo. Immaginiamo ancora il procedimento di divisione del segmento, ma associamo adesso ad ogni divisione un'etichetta numerica: immaginiamo cioè di contare i passi della procedura di divisione: uno, due, tre... Poiché ogni passo della procedura implica un passo successivo, ogni numero raggiunto implica un numero successivo, e questo un altro ancora, e così via. Anche in questo caso sono rispettate le richieste

nito. E infatti Aristotele definisce il continuo senza fare riferimento alla divisibilità, ma ricorrendo alla peculiare forma di relazione tra le sue parti: "due parti di un intero sono continue quando sono in contatto e i loro estremi diventano uno" (*Ph*. V 3.227a11-12; si veda anche V 4.228a29-30; *Cat*. 6.4b20-5a14). L'infinita divisibilità è una conseguenza della definizione, come Aristotele mostra in *GC* I 2.316a15-16. Sull'argomento si veda in particolare Miller (1982) pp. 87-100.

[8] *Ph*. VI 2.232b24-25; si veda anche IV 12.220a30; VI 1.231b15-16; VI 6.237b21; VIII 5.257a33-34; *Cael*. I 1.268a6-7.

avanzate nella definizione: [**A1**] ad ogni numero segue un numero; [**A2**] il numero raggiunto ad ogni passo è finito e [**A3**] via via diverso.

In questo senso – e solo in questo senso – si può parlare di un numero infinito: non perché ci sia un insieme infinito di oggetti che possiamo contare (pensiamo alle parti del segmento), ma perché c'è un processo infinito di generazione di tali oggetti. Questo implica che il numero infinito non esista separatamente dal processo che lo definisce: esiste solo in virtù di, e insieme a, questo processo, vale a dire unicamente in quanto sussiste la possibilità che il processo continui.

> È anche ragionevole che nel numero ci sia un limite verso il minimo, ma verso il più si ecceda via via ogni molteplicità [...] verso il più è sempre possibile pensare un numero più grande, e questo perché i dimezzamenti (le dicotomie) della grandezza sono infiniti. Così il numero infinito non c'è in atto ma in potenza: quello che viene preso eccede via via ogni molteplicità determinata. Però questo numero non è separabile dal processo di dimezzamento (dicotomia) (*Ph*. III 7.207b10-13).

L'infinito del numero, così come l'infinito della divisione, non si riferisce insomma al risultato di una procedura bensì alla procedura in sé. Del resto, la nozione stessa di risultato di una procedura genuinamente iterativa è contraddittoria. Come dovrebbe essere fatto questo risultato? Torniamo ancora una volta al processo di divisione del continuo e immaginiamo di interromperlo, diciamo al *n-esimo* passo. Quello che otteniamo è un insieme di n pezzi, con n ovviamente finito, di lunghezza via via decrescente ma comunque finita. A ciascuno di questi pezzi possiamo dunque continuare ad applicare la procedura di divisione, il che è in accordo con il fatto che nessuno di essi può essere pensato come risultato del processo. Per quanto grande sia n, c'è sempre la possibilità di fare il passo $n+1$*-esimo*, e così via.

Detto in altri termini non c'è, per definizione, un ultimo passo di una procedura iterativa, dunque non c'è un risultato, e dunque non c'è alcun atto associabile alla sua potenzialità: non solo l'infinito in potenza non prelude ad alcun infinito in atto, ma la nozione stessa di infinito in atto è contraddittoria, laddove l'infinito sia inteso in senso genuinamente aristotelico.

Ma come la mettiamo, ci si potrebbe a questo punto domandare, con il senso, anch'esso genuinamente aristotelico, della contrapposizione potenza-

atto? La potenzialità altrove teorizzata da Aristotele è infatti una potenzialità che non solo non è incompatibile con la sua attualità ma è da essa determinata. Pensiamo all'esempio tipico del blocco di marmo, che è in potenza una statua perché arriverà, o comunque potrà arrivare, ad essere una statua in atto; o al seme, che è in potenza un albero perché arriverà, se niente lo impedisce, ad essere un albero. È la statua in atto, sia essa nella mente dell'artista o dove che sia, che dà senso alla statua in potenza, così come è l'albero in atto che dà senso al seme. Come può esistere, in un simile contesto, una potenzialità senza atto?

La risposta è semplice: non può esistere, ed è infatti lo stesso Aristotele, all'inizio della trattazione dell'infinito, a metterci in guardia sulla necessità di cambiare prospettiva. Quando parliamo della potenza dell'infinito, ci avvisa Aristotele, non stiamo parlando della potenza cui vi ho abituati, quella della statua per intenderci. Per usare le sue parole:

> Non si deve prendere "in potenza" nel senso che se è possibile che questo sia una statua, allora questo sarà una statua, così c'è anche un infinito che sarà in atto (*Ph.* III 6.206a18-21).

Piuttosto, chiarisce Aristotele nelle righe che seguono, bisogna analizzare i diversi modi in cui si dice "essere" e considerare quale sia quello corretto da associare all'infinito quando diciamo che "l'infinito è in potenza". L'infinito infatti non è nel modo in cui diciamo che "la statua è" – in potenza o in atto, non importa. Piuttosto, quando diciamo che l'infinito è, impieghiamo il verbo essere in modo analogo a quando diciamo che "la giornata è" o che "la gara è", per indicare cioè non il darsi di un oggetto, ma il venire ad essere via via (*aei*) di un processo:

> Dal momento che 'essere' si dice in molti modi, come è la giornata, o la gara, per il fatto di venire ad essere via via (ἀεί) altra, così è anche l'infinito (*Ph*. III 6.206a21-23).

Mentre però la giornata, o la gara, sono processi che pervengono ad un termine, o se vogliamo a un risultato, e non possiamo pertanto associare ad essi l'attributo 'infinito', esistono processi come quelli genuinamente iterativi considerati sinora che non solo ammettono, ma stabiliscono il senso dell'attributo 'infinito', e ne definiscono la peculiare potenzialità. Per questa ragione in quanto segue chiamerò 'iterativo' l'infinito teorizzato da Aristotele,

e iteratività, o potenzialità A, la forma di potenzialità che lo caratterizza.[9] Seguendo la tradizione dei logici medievali Leibniz chiamerà questo stesso tipo di infinito "sincategorematico".

> Esiste un infinito sincategorematico, ossia una potenza passiva dotata di parti, vale a dire la possibilità di un continuare oltre (*ulterioris progressus*) nella divisione, moltiplicazione, sottrazione e addizione (Leibniz a Des Bosses, 1706; G II, 314-315).[10]

Che lo si chiami potenziale o sincategorematico, ciò che importa qui ribadire è che questo genere di infinito, legato alla nozione di iterazione – il prendere altro di Aristotele o il continuare oltre di Leibniz – è incompatibile con la sua attualizzazione:

> A rigor di termini, è vero che vi è un'infinità di cose, cioè che ce ne sono sempre di più di quante se ne possano assegnare. Ma non esiste un numero infinito, né una linea o un'altra quantità infinita, se le si considera come dei veri e propri Tutti, come è facile dimostrare. Le scuole hanno voluto (o avrebbero dovuto) dire questo, ammettendo un infinito sincategorematico, come si dice, e non un infinito categorematico (*Nouveaux essais sur l'entendement humain*, II. XVII).[11]

2. Potenza e atto: l'infinito in Leibniz

Abbiamo visto come per Aristotele la potenzialità dell'infinito si riduca ad una questione di iterazione, e venga in ultima analisi a coincidere con la pos-

[9] L'argomento è trattato in dettaglio in Ugaglia (2012) e (2018).

[10] L'identificazione tra l'infinito sincategorematico della scolastica e l'infinito potenziale aristotelico, inteso nel senso della potenzialità A, può essere ricondotta a Pietro Ispano (*Summulae Logicales* XII). Qui l'autore discute a lungo dell'infinito, attraverso un'analisi che parte da un problema di logica e di grammatica, vale a dire come usare i diversi significati del termine 'infinito' per sciogliere un sofisma, e giunge ad un'analisi filosofica del termine stesso. Nell'analisi la contrapposizione logico/grammaticale tra l'uso sincategorematico di un termine e il suo uso categorematico è ricondotta alla contrapposizione filosofica tra potenza e atto. Sulla trattazione di Pietro Ispano si veda Ugaglia e Katz (2022) sezione 2.2; sugli sviluppi medievali della nozione di infinito sincategorematico si veda Pasini (2025).

[11] "A proprement parler, il est vrai qu'il y a une infinite des choses, c'est à dire qu'il y en a tousjours plus qu'on n'en puisse assigner. Mais il n'y a point de nombre infini ny de ligne ou autre quantité infinie, si on les prends comme des veritables Touts, comme il est aisé de demonstrer. Les écoles ont voulu ou du dire cela, en admettant un infini syncategorematique, comme elles parlent, et non pas l'infini categorematique" (A VI, 6, 157).

sibilità, presente ad ogni passo di un processo genuinamente iterativo, di passare a quello successivo. Mi sono riferita a questa forma di potenzialità con il termine 'iteratività', o 'potenzialità A' o anche 'sincategorematicità', con riferimento all'infinito sincategorematico più volte citato da Leibniz.

2.1 L'infinito sincategorematico e potenziale della matematica

Per Leibniz come già per Aristotele l'infinito si manifesta innanzitutto nella divisione del continuo, con la sola differenza che Aristotele chiama le divisioni, e di conseguenza le parti del continuo potenziali, mentre Leibniz preferisce chiamarle possibili, o indefinite:

> Ma il continuo matematico consiste nella pura possibilità, come i numeri (Leibniz a Des Bosses, 1713).[12]

> Per quanto riguarda in primo luogo il fatto che il corpo matematico non può essere risolto nei suoi primi costitutivi, da ciò si deduce appunto che esso non è reale, ma qualcosa di mentale, che non indica altro se non la possibilità delle parti, non qualcosa di attuale. Infatti, la linea matematica si comporta come l'unità aritmetica: in entrambi i casi le parti non sono che possibili e del tutto indefinite; e la linea non è più un insieme delle linee in cui può essere divisa, di quanto l'unità non sia un insieme delle frazioni in cui può essere spezzata (Leibniz a De Volder, 30 giugno 1704).[13]

Come mostrano le date delle lettere da cui sono tratti i passi, questa posizione, assunta da Leibniz all'inizio della sua indagine sull'infinito, sarà mantenuta nella maturità: in matematica – e, come vedremo, solo in matematica – l'infinito è potenziale, nel senso della potenzialità A:

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[12] "Continuum vero mathematicum consistit in pura possibilitate ut numeri".

[13] "Quod primum attinet, eo ipso quod corpus mathematicum non potest resolvi in prima constitutiva, id utique non esse reale colligatur, sed mentale quiddam nec aliud designans quam possibilitatem partium, non aliquid actuale. Nempe linea mathematica se habet ut unitas arithmetica, et utrobique partes non sunt nisi possibiles et prorsus indefinitae; et non magis linea est aggregatum linearum in quas secari potest, quam unitas est aggregatum fractionum in quas potest discerpi" (G II, 268).

Aristotele ha spiegato molto bene il pieno e la divisione del continuo, contro gli atomisti (*Remarques sur la doctrine Cartesienne*).[14]

Anche la materia possiede una quantità, ma indeterminata, come dicono gli Averroisti, o indefinita: infatti, finché è continua, non è divisa in parti, e quindi in essa non vi sono termini dati in atto (Leibniz a Thomasius, aprile 1669).[15]

Occorre però a questo punto osservare che la potenzialità A non è l'unica modalità attraverso cui si può leggere la potenzialità nella divisione del continuo, e di conseguenza nell'infinito. Riprendiamo l'esempio del segmento e immaginiamo di dividerlo a metà, come prima. In termini un po' più tecnici, questo significa dividere a ½ (metà), ¼ (metà della metà), ⅛ (metà della metà della metà), e così via... cioè dividere seguendo la successione convergente $a(n) = 1/2^n$.

Ora, cosa cambia se dividiamo a un terzo, anziché a metà? O a un quarto? O secondo un qualsiasi altro rapporto? Cosa cambia cioè se in luogo della successione convergente $a(n) = 1/2^n$, che impone di dividere a $1/2$, $1/2^2$, $1/2^3$, ..., $1/2^n$,... utilizziamo la successione convergente $a(n) = 1/3^n$, che impone di dividere a $1/3$, $1/3^2$, $1/3^3$, ..., $1/3^n$,... o la successione $a(n) = 1/4^n$, che impone di dividere a $1/4$, $1/4^2$, $1/4^3$, ..., $1/4^n$,... o in generale la successione $a(n) = 1/m^n$, che impone di dividere a $1/m$, $1/m^2$, $1/m^3$, ..., $1/m^n$,...? Ovviamente non cambia nulla: in ogni caso otteniamo una procedura iterativa infinita, una per ogni numero che possiamo sostituire a m nella formula $a(n) = 1/m^n$. E se consideriamo che i numeri sono infiniti, ci troviamo di fronte a infiniti modi possibili, e del tutto equivalenti, di dividere infinitamente il segmento.

C'è dunque un altro senso, non iterativo, in cui si può affermare che le divisioni (o, più precisamente, le leggi della divisione) di un segmento sono

[14] "Aristotle a fort bien expliqué le plein et la division du continu contre les atomistes". Il testo risale agli anni intorno al 1675 (A VI, 4, 2047). Una conoscenza diretta, anche se parziale, delle opere di Aristotele è suggerita dalla corrispondenza di Leibniz con Thomasius (A II, 12, 16-44), dove Leibniz argomenta sul fatto "che le oscurità di Aristotele derivino dal fumo scolastico, e che lo stesso Aristotele si conformi in modo sorprendente a Galileo, Bacone, Gassendi, Hobbes, Cartesio, Digby" (A II, 12, 18). Sulla questione si veda Ugaglia (2022) e la letteratura secondaria qui citata.

[15] "Quantitatem quoque habet materia, sed interminatam, ut vocant Averroistae, seu indefinitam, dum enim continua est, in partes secta non est, ergo nec termini in ea actu dantur" (A II, 1^2, 26-27).

potenzialmente infinite. E c'è un'altra forma di potenzialità, quella associata alle infinite possibili leggi di divisione infinita, che chiamerò potenzialità L. Nella divisione del continuo le due potenzialità coesistono e il segmento può dirsi potenzialmente infinito in due sensi: è infinito secondo la potenzialità L, perché ci sono infiniti modi per tagliarlo, uno per ogni m; è infinito secondo la potenzialità A, perché una volta scelto in che modo tagliarlo ciò avviene per mezzo di una procedura iterativa, che non ha fine (1/m, $1/m^2$, $1/m^3$, ..., $1/m^n$...). In altri termini, possiamo affermare che per Leibniz l'infinito della matematica è sincategorematico (potenzialità A) *e* potenziale (potenzialità L).[16]

Per Aristotele è solo la potenzialità A che conta. Per motivi piuttosto chiari – pensiamo a Zenone – egli utilizza spesso la divisione a metà, cioè la divisione secondo il rapporto ½, ma la scelta di un diverso rapporto non ha per lui alcuna importanza, ai fini della procedura:

> Se qualcuno, infatti, avendo cominciato a prendere nella grandezza limitata una parte definita, andasse avanti a prendere secondo uno stesso rapporto [...] non verrebbe a capo dell'infinito (*Ph.* III 6.206b7-9).

Per Leibniz, al contrario, la possibilità di fissare il rapporto avrà una grande importanza, e ciò per una ragione fondamentale: a differenza della sincategorematicità, che per definizione è in contraddizione con qualsiasi forma di attualità, la potenzialità L non è a priori incompatibile con l'attualità.

Torniamo al segmento e alle infinite possibili successioni di taglio, ma ora supponiamo di fissarne una: a questo punto anche la posizione dei tagli risulta fissata, cosicché la possibilità di dividere ovunque viene meno, e con essa la potenzialità L. Se la successione fissata è $a(n) = 1/3^n$, i tagli saranno posti a 1/3, 1/9, 1/27 ecc.... mentre se la successione fissata è $a(n) = 1/5^n$ saranno posti a 1/5, 1/25, 1/125, ecc... e così via. Chiamerò questa situazione, in cui la potenzialità L è collassata su una delle possibili scelte di m, attualità L.

Leibniz descrive questa situazione in termini molto chiari quando scrive a Bernoulli:

[16] La lettura dell'infinito potenziale in Leibniz qui adottata è discussa, e contestualizzata nel dibattito contemporaneo, in Ugaglia (2022).

Supponiamo che sulla linea siano dati 1/2, 1/4, 1/8, 1/16, 1/32 etc e che tutti i termini di questa serie esistano in atto (Leibniz a Joh. Bernoulli, 1698).[17]

Notiamo che qui Leibniz sta ragionando per assurdo: è vero che in matematica i tagli non sono fissati, e che una linea può essere divisa ovunque, ma supponiamo, per assurdo, che le cose non stiano così. Supponiamo cioè di trovarci in una situazione in cui il segmento è divisibile in potenza (potenzialità A) in parti che però sono in atto (attualità L).

Aristotele obietterebbe che la situazione descritta non ha senso, perché l'ipotesi che facciamo è in contraddizione con la definizione stessa di continuo. E di fatto così obietta anche Bernoulli, che nel seguito della corrispondenza da cui è tratto il passo precedente rifiuta di prendere in considerazione l'ipotesi di Leibniz, in quanto intraducibile in termini matematici.

Il punto è che Leibniz qui non sta parlando da matematico: sta parlando da fisico, e dal suo punto di vista questo fa una grande differenza.

2.2 L'infinito sincategorematico e attuale della fisica

L'esempio della linea divisa in atto secondo la successione 1/2, 1/4, 1/8, 1/16, 1/32 etc., su cui Leibniz e Bernoulli si trovano in disaccordo, è un esempio matematico, ma il problema che l'esempio sarebbe inteso chiarire è un problema di filosofia naturale, su cui i due corrispondenti stanno dibattendo da qualche lettera, e continueranno a dibattere.[18]

La questione del contendere è un'affermazione di Leibniz, secondo cui mentre un oggetto matematico è divisibile all'infinito in parti che sono solo in potenza, un corpo fisico è divisibile all'infinito in parti che sono già in atto. L'affermazione è ribadita più volte da Leibniz, in termini molto chiari, prima e anche dopo la discussione con Bernoulli, le cui obiezioni matematiche non hanno evidentemente avuto grande effetto:

[17] "Ponamus in linea actu dari 1/2, 1/4, 1/8, 1/16, 1/32 etc. omnesque seriei hujus terminos actu existere" (GM III, 536). L'esempio è proposto da Bernoulli a Leibniz in una lettera di poco precedente dove si legge "Concipe aliquam magnitudinem determinatam dividi in partes geometrica hac progressione descendentes 1/2 + 1/4 + 1/8 + 1/16 + etc" (GM III, 529). Leibniz riprende, fa suo e discute l'esempio.

[18] "Nam omne corpus etiam quantulumcumque, meo senso, dividitur in partes actu, et quidem non tantum mente assignabiles, sed et diversitate motuum reapse discretas" (Leibniz a Joh. Bernoulli 1697; GM III, 447).

La materia non è soltanto divisibile all'infinito, ma ogni parte della materia è già attualmente divisa in altre parti (Lettera ad Arnauld, 28 novembre-8 dicembre 1686).[19]

La differenza tra il modo in cui una linea è costituita da punti e il modo in cui la materia è costituita da sostanze, che sono in essa, è la seguente: il numero dei punti non è determinato, ma il numero delle sostanze, anche se infinito, è tuttavia reale e determinato, perché deriva da una divisione attuale della materia, e non da una divisione meramente possibile. La materia non è divisa in ogni modo possibile, ma soltanto secondo una proporzione determinata, come accade in una macchina, in uno stagno, o in un gregge. Una linea non è un aggregato di punti, mentre un corpo è un aggregato di sostanze (*Communicata ex disputationibus cum Fardella*).[20]

In verità, la materia non è un continuo, ma un discreto, attualmente diviso all'infinito (Lettera a De Volder, 11 ottobre 1705).[21]

Del resto, per passare dalle idee della geometria alle realtà della fisica, stabilisco che la materia sia effettivamente divisa in parti sempre più piccole, per quanto piccole si vogliano, cioè che non esiste alcuna parte che non sia attualmente suddivisa in altre che esercitano movimenti differenti (Leibniz a Des Bosses 11-17 Marzo 1706).[22]

Ci troviamo qui di fronte ad affermazioni del tutto estranee alla prospettiva aristotelica da cui è partita l'analisi leibniziana dell'infinito. Leibniz non sta solo dicendo che in natura la successione dei tagli è fissata: sta dicendo che

[19] A II, 2, 122

[20] A VI, 4, 1673-1674. Vale qui la pena di notare che l'accostamento tra sostanze e parti ultime della materia non implica coincidenza tra i due concetti. Le sostanze, o monadi, appartengono per Leibniz al regno della metafisica, non della fisica. In quanto tali non sono oggetti materiali, e non possono pertanto in alcun modo entrare nella composizione materiale di un corpo fisico. La peculiare relazione che sussiste per Leibniz tra parti materiali e sostanze è tuttavia cruciale ai fini dell'analisi dell'infinito in atto, e sarà trattata in dettaglio *infra*, nella sezione 2.3.

[21] GP II, 278.

[22] "Caeterum ut ab ideis Geometriae, ad realia Physicae transeam; statuo materiam actu fractam esse in partes quavis data minores, seu nullam esse partem, quae non actu in alias sit subdivisa diversos motus exercentes". La questione del moto come fattore che attualizza le parti di un corpo fisico esula dagli scopi di questo lavoro. Tra i molti studi che se ne occupano, mi sento di rimandare il lettore al poco noto Vidinsky (2008), dove l'argomento è trattato in modo esaustivo e brillante.

tutti i tagli lo sono. Sta dicendo insomma che l'attualità L non riguarda solo la legge, riguarda anche gli infiniti tagli che essa determina.[23]

In una prospettiva aristotelica, attualizzare la legge della divisione, cioè fissare la regola che dice dove dividere, non può in alcun modo equivalere ad attualizzare la totalità delle divisioni: non in matematica e nemmeno in fisica. Sebbene univocamente determinate, le divisioni restano infinite in senso puramente potenziale, cioè secondo la potenzialità A, siano esse le divisioni di un segmento matematico, di una linea tracciata nel diagramma o di un corpo fisico esteso. In altri termini – ed è questo un passaggio cruciale – per Aristotele non ha senso parlare di tagli *già* presenti da qualche parte, prima che essi vengano realizzati. Quando egli afferma, per esempio, che nel percorso di Zenone ci sono infinite metà potenziali, intende semplicemente che l'azione di dividere il percorso a metà può essere reiterata indefinitamente; non sta affermando che ci sia 'qualcosa' di già presente, delle divisioni potenziali che attendono solo di essere attualizzate. Nessuna traccia ontologica delle divisioni, dunque, precede l'atto della divisione.[24]

Questo è vero per Aristotele, ed è stato vero per il giovane Leibniz, che per un breve periodo, nel tentativo di conciliare Aristotele con le tesi moderne circa la composizione dei corpi fisici, non faceva distinzione tra l'estensione degli oggetti matematici e la materia degli oggetti fisici: sosteneva che entrambe fossero continue, e dunque divisibili all'infinito in senso puramente potenziale, in parti anch'esse potenziali.[25]

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[23] Lo stralcio sopra riportato è parte di un lungo acceso scambio di opinioni con Bernoulli. Sebbene l'argomento sia matematico, la discussione ha un'origine fisica, e riguarda la divisione dei corpi fisici. L'affermazione di Leibniz, secondo cui un corpo fisico è divisibile all'infinito ma le parti sono in atto, è negata da Bernoulli, che non riesce (giustamente) a tradurla in termini matematici. È qui che interviene l'argomento per ipotesi: supponiamo, afferma Leibniz, che anche in matematica i tagli siano fissati… Bernoulli non accetterà mai l'ipotesi di Leibniz, e l'argomento sarà lasciato cadere.

[24] Ricordiamo che per Aristotele il continuo – sia esso di natura matematica o fisica – è un tutto che precede (dal punto di vista fisico, logico e ontologico) le sue parti: può essere diviso in parti potenzialmente infinite, ma non può essere costruito a partire da parti infinite, perché ciò implicherebbe che le parti siano già in atto, e quindi contraddirebbe l'assunto iniziale.

[25] Questa fase del pensiero di Leibniz è testimoniata dalla corrispondenza con Thomasius degli anni 1668-1669.

Solo negli sviluppi successivi del suo pensiero, influenzato da un lato dagli studi matematici e dall'altro da una ripresa di prospettive metafisiche fortemente non aristoteliche, Leibniz giunge a concepire la divisibilità infinita in due modalità radicalmente distinte e tra loro incompatibili: una modalità che si applica al dominio matematico e un'altra al dominio fisico.[26] In questa prospettiva matura, mentre un solido geometrico continua a poter essere tagliato ovunque, un corpo fisico è caratterizzato, e al tempo stesso vincolato, da una propria legge di divisione: la materia non è divisa in ogni modo possibile, ma soltanto secondo una proporzione determinata. Ciò significa che, indipendentemente dal fatto che qualcuno lo divida, o che tale divisione avvenga effettivamente, i punti in cui è possibile effettuare i tagli sono già fissati.

In questo senso si può parlare in fisica di un infinito che è sincategorematico *e* attuale, dove l'aggettivo 'sincategorematico' si riferisce alla potenzialità di tipo A, mentre l'aggettivo 'attuale' si riferisce all'attualità di tipo L. È anzi proprio la distinzione tra i due tipi di potenzialità, e i due tipi di attualità corrispondenti, che permette a Leibniz di affermare questa coesistenza senza incorrere in paradossi logici.

2.3 Il labirinto del continuo

Ma che dire dei paradossi matematici? L'impossibilità di tradurre in termini matematici la nozione leibniziana di infinito sincategorematico attuale senza incorrere in assurdi, già posta in rilievo da Bernoulli, è un dato di fatto piuttosto evidente. In quanto sincategorematico, e cioè dipendente da un processo, l'infinito è incompatibile con la nozione di insieme, o di Tutto come dice Leibniz. I passi di un processo infinito, e quindi le parti prodotte ad ogni passo, sono infiniti ma non formano un Tutto:

[26] Si tratta, sul versante matematico, dell'introduzione degli infinitesimi e dei cosiddetti "infiniti terminati", che non trovano corrispettivo nella realtà fisica. Su questo punto, l'autore si colloca nell'interpretazione non-archimedea proposta da Sherry and Katz (2012), Katz and Sherry (2013), e successivamente sviluppata in Katz *et al.* (2021). Per un'interpretazione alternativa, che legge gli infinitesimi in senso sincategorematico, si veda Levey (1998), Arthur (2013), Rabouin and Arthur (2020). Un'interpretazione più neutrale è offerta da Bos (1974) e Knobloch (1999). Una panoramica dei vari approcci si trova nel volume curato da Goldenbaum and Jesseph (2008).

A rigor di termini, è vero che vi è un'infinità di cose, cioè che ce ne sono sempre di più di quante se ne possano assegnare. Ma non esiste un numero infinito, né una linea o un'altra quantità infinita, se le si considera come dei veri e propri Tutti, come è facile dimostrare (*Nouveaux essais sur l'entendement humain*, II. XVII).

In quanto attuali, però, le parti devono poter essere considerate nella loro totalità, e quello che si ottiene è un insieme, o se vogliamo un Tutto, di infiniti elementi. Ma ammettendo un siffatto insieme si arriva ai paradossi della relazione tutto/parti, e al problema del confronto tra infiniti diversi, come sia Leibniz che Bernoulli sanno bene: o Leibniz fornisce, come farà Cantor, regole per confrontare insiemi infiniti, o questo paradosso non è evitabile, e la nozione di infinito sincategorematico e attuale non è matematicamente accettabile.[27] E vorrei sottolineare come non si tratti di una critica: Leibniz non ha mai sostenuto che l'attualità delle parti fosse una proprietà matematica, né ha mai cercato di ricondurre l'infinito fisico a proprietà matematiche.

Al contrario, ha sempre rivendicato la separazione tra il dominio della fisica e quello della matematica. Di più, ha esplicitamente messo in guardia il lettore contro i fraintendimenti che inevitabilmente seguirebbero dai tentativi di mischiare i due piani, confondendo le proprietà dei corpi fisici con quelle del continuo matematico:

Ed è la confusione tra l'ideale e l'attuale che ha confuso tutto e creato il labirinto della composizione del continuo (*Remarques sur les Objections de M. Foucher*, 1695).[28]

Noi invece, confondendo gli ideali con le sostanze reali, mentre cerchiamo parti attuali nell'ordine dei possibili, e parti indeterminate nell'aggregato degli attuali, cadiamo noi stessi nel labirinto del continuo e in contraddizioni inesplicabili (Leibniz a De Volder, 19 gennaio 1706).[29]

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[27] Ho qui accennato brevemente al più evidente dei problemi che il concetto di un infinito sincategorematico e attuale crea in matematica. Nonostante questi problemi, la consistenza matematica del concetto viene difesa in Arthur (2013), dove il termine "infinito sincategorematico attuale" viene introdotto e in Arthur (2019) dove l'infinito fisico di Leibniz viene accostato a quello di Cantor. Per una critica dettagliata ed esaustiva delle argomentazioni di Arthur si veda Bussotti (2019).

[28] "Et c'est la confusion de l'idéal et de l'actuel qui a tout embrouillé et fait le labyrinthe de compositione continui" (GP IV, 491).

[29] "Nos vero idealia cum substantiis realibus confundentes, dum in possibilium ordine partes actuales, et in actualium aggregato partes indeterminatas quaerimus, in labyrinthum continui contradictionesque inexplicabiles nos ipsi induimus" (GP II, 282).

L'attualità delle parti di un corpo fisico, sta dicendo Leibniz, non appartiene all'ambito ideale della matematica, dove non solo è inutile, ma pericoloso cercarla, perché si cadrebbe in contraddizione. Né deve stupire che Leibniz, nella fase matura della sua ricerca, si rifiuti di ridurre la fisica alla matematica.

Il progetto di identificare la fisica con la meccanica, e quindi con la matematica, che Leibniz aveva intrapreso nella fase iniziale delle sue ricerche, viene infatti meno ad un certo punto, di fronte all'impossibilità di rendere conto di alcune proprietà fondamentali degli oggetti fisici:

> Ma quando cercai le ragioni ultime del meccanicismo e le stesse leggi del movimento, fui molto sorpreso di scoprire che era impossibile trovarle nella matematica, e che bisognava tornare alla metafisica. Questo è ciò che mi riportò alle entelechie, e dal materiale al formale (Leibniz a Remond, 1714).[30]

È a questo punto che Leibniz ristruttura completamente la relazione tra fisica, matematica e metafisica. La matematica cessa di essere il fondamento della fisica e diventa al più una sua approssimazione, un'astrazione utile per descrivere il comportamento degli oggetti ma non per comprenderli. Al contrario, la metafisica diventa il fondamento reale e ultimo della fisica, che pur senza coincidere con essa, ne deve "esprimere" la realtà.[31]

In particolare, i corpi fisici devono esprimere la realtà delle sostanze metafisiche, e poiché queste ultime risultano per Leibniz dall'aggregazione ordinata di sostanze individuali,[32] che sono entità discrete, è necessario che in qualche modo i corpi fisici rechino traccia dell'individualità, e cioè dell'attualità, di queste sostanze. Come Leibniz spiega molto chiaramente in una lettera a De Volder del 5 dicembre 1702 (GP II, 252), ciò non implica che la

[30] "Mais quand je cherchay les derniers raisons du Mechanisme et les loix mêmes du mouvement, je fus tout surpris de voir qu'il etoit impossible de les trouver dans les Mathematiques, et qu'il falloit retourner à la Metaphysique. C'est ce qui me ramena aux Entelechies, et du materiel au formel" (G III, 606).

[31] Il senso del verbo "esprimere", introdotto e discusso da Leibniz nella corrispondenza con Arnault del settembre 1687 (A II, 2, 230-238), è argomento di ampio dibattito, ricostruito in Garber (2009).

[32] La modalità di composizione dei corpi fisici è discussa in Nunziante (2011) dove sulla base dei testi viene proposta una interessante correlazione tra i lavori di Leibniz e quelli di Hercule Savinien de Cyrano de Bergerac.

singola parte del corpo fisico debba "esprimere" la singola monade, ma piuttosto che la procedura infinita di analisi del corpo fisico nelle sue parti debba "esprimere" lo stato di sintesi delle infinite monadi da cui risulta:[33]

> Ma nelle realtà, cioè nei corpi, le parti non sono indefinite (come nello spazio, che è una cosa mentale), bensì effettivamente determinate in un certo modo, secondo come la natura ha effettivamente stabilito divisioni e suddivisioni in base alla varietà dei movimenti; e sebbene tali divisioni procedano all'infinito, tuttavia tutto risulta da certi primi costitutivi o unità reali, sebbene in numero infinito. Tuttavia, parlando con precisione, la materia non è composta da unità costitutive, ma da esse risulta (Leibniz a De Volder, 30 giugno 1704).[34]

Per questo è necessario che le parti siano infinite *e* attuali. Questo giustifica, in ultima analisi, il carattere sincategorematico *e* attuale dell'infinito come concepito da Leibniz in fisica, nonché il fatto che, come ogni proprietà di carattere metafisico, esso risulti intraducibile in termini puramente quantitativi.[35]

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[33] La nozione di infinito che riflette questa situazione, una nozione estranea alla categoria della quantità, dell'estensione e della divisibilità, che Leibniz chiama ipercategorematico, è studiata in Antognazza (2015). Sul legame tra la legge della serie, che dice dove dividere il corpo fisico, e la legge degli stati interni della monade dominante, che dice come stanno insieme le monadi, si veda Ugaglia (2022) in particolare la nota 29. Per un'interpretazione differente della posizione di Leibniz, in cui la realtà delle sostanze metafisiche implica la possibilità, anche in fisica, di un infinito categorematico, si veda Pasini (2025).

[34] "At in realibus, nempe corporibus, partes non sunt indefinitae (ut in spatio, re mentali), sed actu assignatae certo modo, prout natura divisiones et subdivisiones actu secundum motuum varietates instituit, et licet eae divisiones procedant in infinitum, non ideo tamen minus omnia resultant ex ceteris primis constitutivis seu unitatibus realibus, sed numero infinitis. Accurate autem loquendo materia non componitur ex unitatibus constitutivis, sed ex iis resultat" (GP II, 268).

[35] La presente interpretazione ha senso solo in un contesto in cui le sostanze siano interpretate come oggetti puramente metafisici, non come oggetti fisici (si veda ad esempio Garber 2009 e la bibliografia qui citata). Solo in un tale contesto, che è quello adottato da chi scrive, le sostanze possono essere infinite in senso ipercategorematico, senza che ciò comporti che lo siano anche in senso categorematico. Laddove invece si attribuisca alle sostanze un carattere fisico (si veda ad esempio Phemister 1999), occorre giustificare in altro modo il fatto che Leibniz neghi l'esistenza di un infinito categorematico, in qualunque forma.

Abbreviazioni

A = *Sämtliche Schriften und Briefe*, hrsg. von Deutsche Akademie der Wissenschaften, Darmstadt & Leipzig & Berlin: Akademie Verlag, 1923-, Reihe 1-8; citato per serie, volume e pagina.

GM = C.I. Gerhardt (Hrsg.), *Leibnizens Mathematische Schriften*. Berlin: Asher & Schmidt, 1849-63 (rist. Hildesheim: Olms, 1971), 7 voll.; citato per volume e pagina.

GP = C.I. Gerhardt (Hrsg.), *Die Philosophischen Schriften von Gottfried Wilhelm Leibniz*. Berlin: Weidmann, 1875-90 (rist. Hildesheim: Olms, 1960), 7 voll.; citato per volume e pagina.

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ISSN 2785-4515
N° 9
2026

Aristotelica

Rosenberg & Sellier